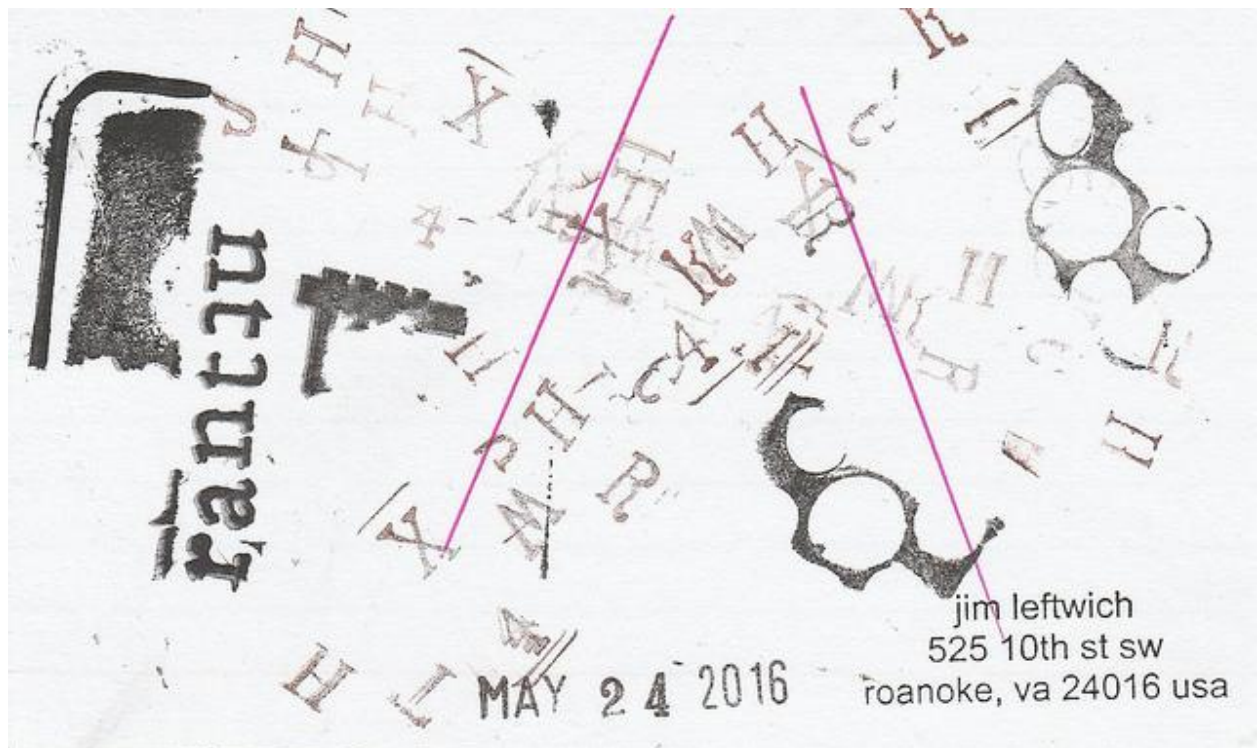


Six Months Aint No Sentence
2016
Jim Leftwich

Book 171

|||||

06.08.2016



jim leftwich
525 10th st sw
roanoke, va 24016 us

RACK-AND-PANEL CONNECTORS

In many areas of electronics it is necessary to disconnect a chassis quickly from its mounting rack for rapid test or replacement. When this is the case, a quick-disconnect type of connector is employed. A typical rack-and-panel connector is shown in Fig. 15 • 11.

CARE IN WIRING CONNECTORS

Most cable connectors are quite compact. For this reason extra care should be exercised when wrapping the wire leads on the connector terminals. Solder should also be kept to a minimum. As additional protection, a short length of sleeving is slipped over the soldered connector terminal (see Fig. 15 • 12).

15 • 3 FLAT PRINTED-CIRCUIT CABLE

Cable is also made in the printed-circuit variety as illustrated in Fig. 15 • 13. The fact

AND CONNECTORS

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roanoke, va 24016 usa

Wiring diagrams refer to a harness as a cable. Typical of the symbols used in wiring diagrams is the five-conductor cable shown in Fig. 15 • 14a. Also shown are the symbols

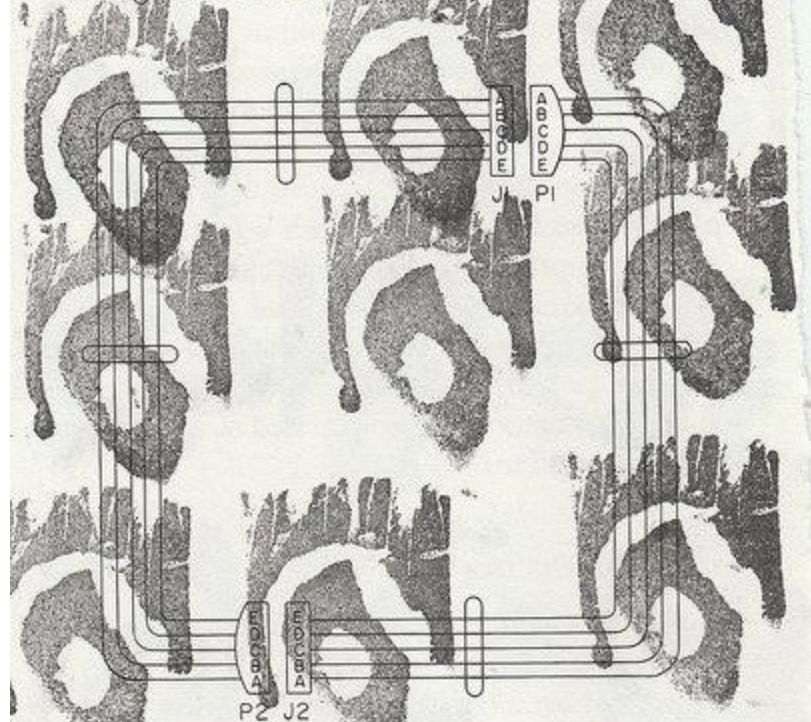
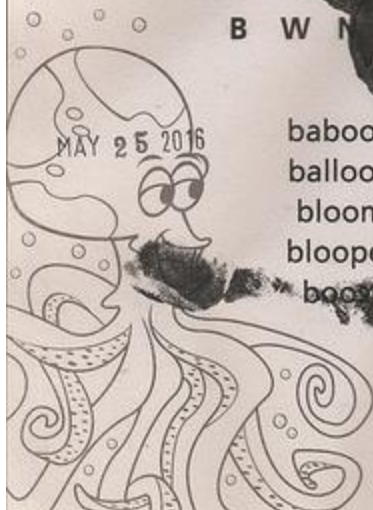


Fig. 15 • 15 Cable-wiring diagram.

OO Sound

U V K O P S
I N M Z G H C
R O K R B J O O
O B W T Y V O
B L P E S O N P
O S H O O L
O B V T O G O N
L W
B W N O O

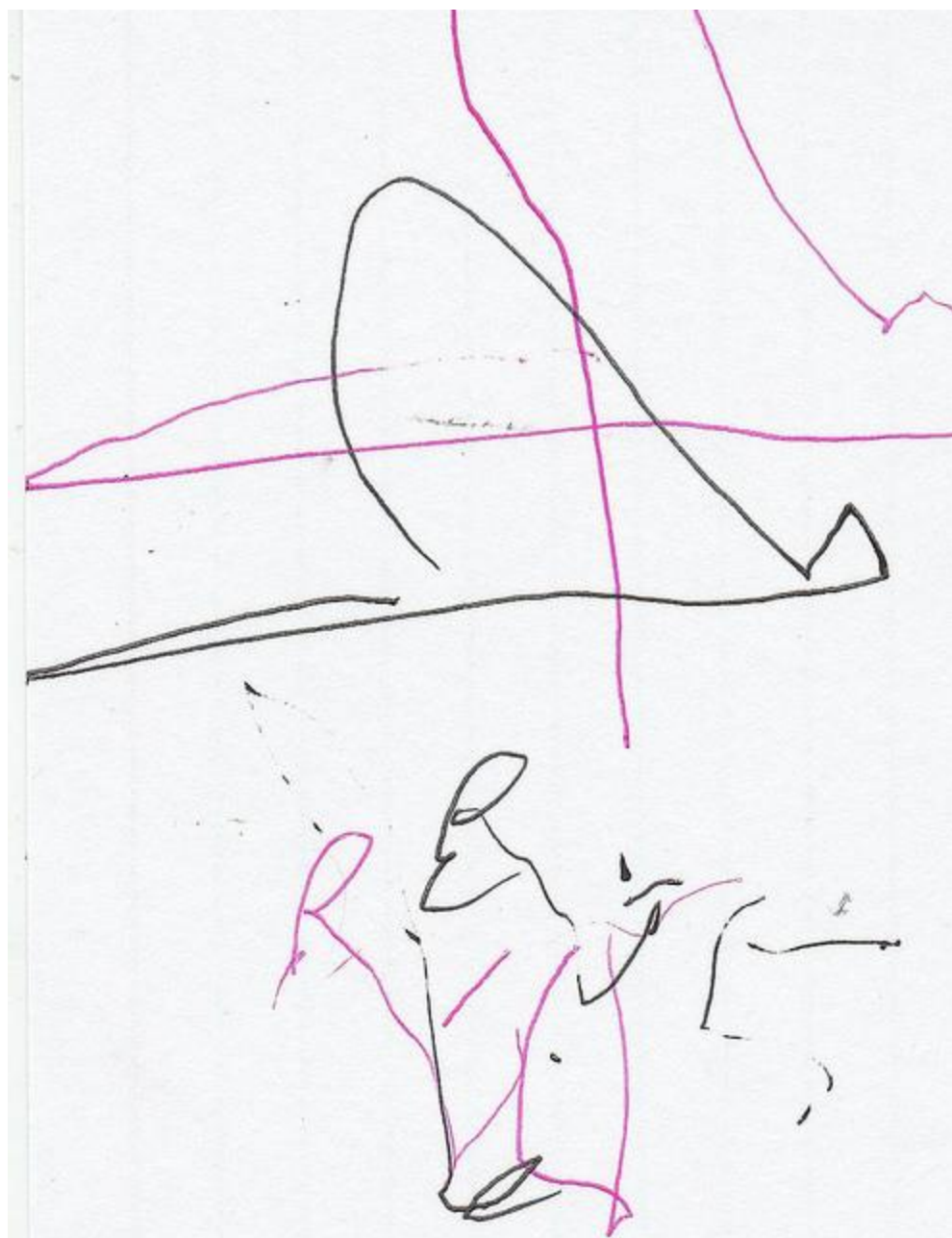


MAY 25 2016

baboon cartoon
balloon moon
bloom school
blooper soap
boost

46

Jim Leftwich
525 10th st sw
Roanoke, VA 24016 USA



the sound

J	I	N	T	V	L	A	P
K	T	S	K	H	I	N	T
S	S	P	P	W	T		
R	Q	T	I	L	Z	N	
G	A	N	I	B			
L	I	T		N	M		
I	K	N	L	P	T		
K	H	C	F	P	G		
T	N	I	L	F	N	S	

flint
glint
hint
lint
mint

print
splint
sprint
squint
tint

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MAY 19 2016



UN Sound

I Y R U N N A J P

S H U N
B U N S
E V N V
M Q T Q
N S Q Z
V U L L
J A F S
A C O A

run
shun
spun
stun
sun

MAY 25 2016

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MAY 19 2016

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roanoke, va 2401





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MAY 24 2016

M Sound

T D B Z X Z Z A C
 M R R O O A L X D
 C H O O T A B I R
 A L M A R T T X E
 A J A M M B O C A
 T L W I Y W X M M
 F Z B O M E X A M
 N S O U R G L J S
 E T U S M M L A P

alarm
 album
 bottom
 claim
 dream

exam
 palm
 roam
 worm
 zoom

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MAY 24 2016

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MAY 27 2016

Avant Garde

60 Point

ABCE HIJKLMN
OPQR VWXYZ
abcde lmnop
qrstuvw
\$12345

48 Point

ABCDEFGH JKLMNOPQR
STUVWXYZ 234567890
abcdefgh klmnopqrstu
vwxyz

30 Point

ABCDEFGHIJKLMN XYZ
\$1234567890
abcdefghijklmnop

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MAY 22 2016



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MAY 23 2016

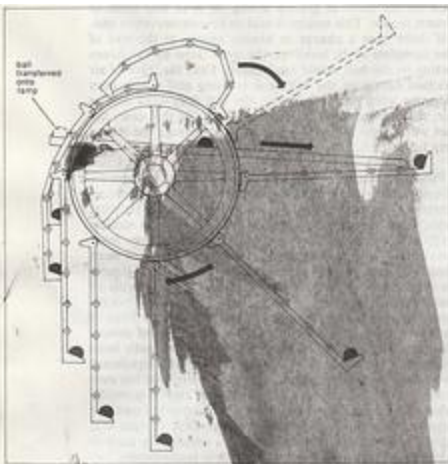


Figure 1: Typical Overbalanced wheel (from HETZL).

Fig. 1.5. Anypha, *Perpetual Motion Machines* (1996), p. 10.

See American Institute, *All rights reserved* (2000).

perpetual motion machines based on overbalanced wheels were Edward Somerset, 2nd marquis of Worcester (1600–67), and Johann Ernst Eberhard (1680–1745) who was generally known as Orffyreus. Each of these men built rather large wheels that were capable of giving impressive demonstrations of apparent perpetual motion (cf. probably the largest large inertia wheel kept there turning for long 525 years of its life once set into motion. Within a few years of 1640, probably around 1638 or 1639, Somerset operated a device for Charles I and his court. A Dutch physicist, W.J. Gravesande (1688–1742), inspected Orffyreus' wheel and in many ways was impressed with its construction. In a long and detailed letter to Sir Isaac Newton he described the external of the wheel. Orffyreus argued that he did not want to let a review of the secret of perpetual motion that he had discovered. Orffyreus refused to allow Gravesande to inspect its interior.



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MAY 27 2016

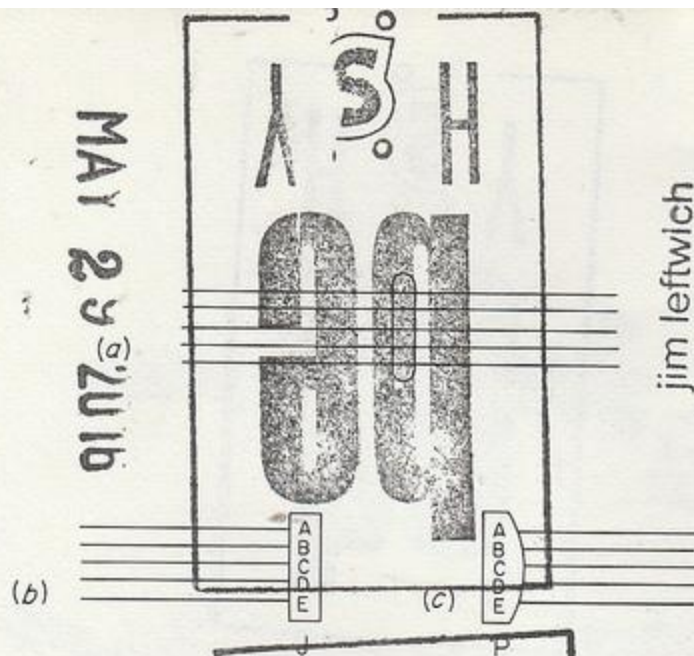


Fig. 15 • 14 Symbols for use with cables and connectors. (a) Five-conductor cable. (b) Five-contact jack (connector receptacle). (c) Five-contact connector plug.

conductors are thin flat lengths of copper imbedded in a plastic film. Flat printed-circuit cable needs no spot tying or lacing.

The connectors shown in Fig. 15 • 13 are engineered solely for flat printed-circuit cables.

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MAY 29 2016

The concept of energy is most useful in the understanding of the physical world. First, at any one time, the general state or law describes or describes the role of energy as one of the essential ingredients in the formulation of a physical understanding.

Other articles in the *Manuscripta* include the concept of ecology, including the work of the *Manuscripta* on ecology, and the concept of ecology, including the work of the *Manuscripta* on ecology.

Development of the machine was not a simple task. The energy was not applied in a measure that was likely to do work, but rather led in the development of the science of mechanics. Indeed, the development of classical mechanics may be regarded as a first step towards the concept of energy. The science of energy, however, does not lack at least as far as Galileo and the 17th century did. It recognized the work done by a force and the energy of a body, but it did not have a concept of energy through which that force must be converted into work (or, in addition, the work) remains constant even though other factors may vary. The concept of heat, or, in other words, a quantity of energy proportional to the product of mass and the square of the velocity, was introduced in the 18th century. In the 19th century the term *energy* was applied to the concept

important role in the spatial integral leads to a quantity that is not invariant under the change in kinetic energy of the mass element from the action of the force and is just the half of the *vir* term. On the other hand, the temporal integration leads to the evaluation of the change in momentum of the mass resulting from the action of the force.

When the matter was debated as to whether integration led to the evaluation of the change in kinetic energy or momentum, the physicist Wilhelm Leibniz argued that the spatial integral of the vir term measure, while not having the Fresnel philosopher and mathematician René Descartes had defended the momentum integral. Eventually, in the 18th century, the physicist d'Alembert of France showed that Lagrangian and both approaches to measuring the effect of a force on a system are equivalent. The controversy was

the electrical (the commiser). The vision of energy as a fluid, which in the 17th century was the dominant theory of the universe, is already present in the 17th century. The concept of energy as a fluid, which in the 17th century was the dominant theory of the universe, is already present in the 17th century. The concept of energy as a fluid, which in the 17th century was the dominant theory of the universe, is already present in the 17th century.

The co.
of fricti.[illegible]

The concept of energy conservation. A fundamental law has been observed to hold for all natural phenomena requiring that the change in the energy, E , that the system undergoes, the conservation of energy, is not a direct result of any process going on in nature, rather it is a statement that the quality called energy remains constant, regardless of what it is evaluated or what process—possibly including transformations of energy from one form to another—exists on between the two states.

the law of conservation of mass, energy, and momentum. Matter at a place has a mass, and it is conserved. The nature of it is what. Thus, if it is a gas, it is a gas, and it is defined in such a way that it cannot be destroyed or removed from the system; that energy must be conserved within that system; and so on. The details of the processes going on inside the system boundaries. A peculiar feature of closed-system thermodynamics is that whatever the energy of a system is, it remains in the system. It is not lost. It is not gained. It is conserved. The only difference is that the quantity of energy has been either added or removed from the system over the time interval, depending on the two

Application of law of conservation of energy



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ODAY'S SPEC
CINCO DE MA
RGER DE NU
TH 5-ALARM
I. SCORCHER



© 2016 by Kip

THROUGH 5-5

|||||
i voted for a woman in the last presidential election.
|||||

Olga Vladimirovna Rozanova (b. Melenki 1886 - d. Moscow 1918). Although she was mainly a painter, she also developed her activities in the field of design, fashion, book illustration and poetry, and was one of the leading representatives of the new typography. In her artistic life, she participated in the activities of cubo-futurist and suprematist artists. Her poetry is close to zaum language (her husband was Alexei Kruchenykh, creator of zaum), seeking through an "intuitive creation" of the phonetic of different languages, a universal intercommunication between them. In this poem called Spain she takes the sonority of some Spanish words -both real and fictional - and transforms them according to a rhythmic oral cadence, mixing them with other words from Russian: "Antiquary", "Phantom", "Grimaces", "The anthem", "Of death", generating a dramatic and poetic game of tones that portray a place; "the patterns of association are almost entirely paronomastic, and continuity is based on such paronomastic links" (Gerald Janecek).

|||||

Nancy Perloff on Natalia Goncharova

from Mirskontsa (Worldbackwards): Collaborative Book Art and Transrational Sounds

Goncharova's cover designs for Mirskontsa work closely with a concept of book format and production that was most likely developed by Kruchenykh. In 1912, prior to the publication of Mirskontsa, Kruchenykh initiated a collaboration with Goncharova and Larionov on a series of postcards, in which drawings and texts were hand-lithographed on one side, and artist's name, title of drawing, publisher's name (Kruchenykh), and printer's name were typeset on the reverse. Susan Compton argues convincingly that the postcards served as a lead-up to the hand-lithographed books. In his design for Mirskontsa, Kruchenykh pushes the limits of handmade processes. He cultivates a deliberately unrefined and unconventional appearance by choosing a square format, a stapled binding, and cheap, brittle paper with rough edges. The makeshift nature of the binding and the paper captures an aesthetic that Goncharova, as creator of the cover, expresses in each of the 220 collages that she designed for the book. On the Getty copy (see fig. 1), she uses a single sheet of green paper, pastes a cutout in the shape of a flower, and creates a second collage out of a white strip of paper for the title and the authors' names. The lower stem of the flower is partially covered by the white strip, while the three petals on the upper right appear to have originally extended beyond the cover itself but

have since been torn or cut off. Goncharova thus experiments with partial views, equivocal readings, and gestures of incompleteness. Her lettering of the title, МИРСКОНЦА, and the authors' names, А. КРУЧЕНЫХ В. ХЛЕБНИКОВ, mixes print (ОН of the title, ЕН of Kruchenykh, ОБ of Khlebnikov), with cursive (the "Р" in "МИР" and the "У" in "КРУ"), the latter partially concealing the archaic letterform "Е" of "ХЛЕБНИКОВ." The obscuring of visual forms and letters and the general disorderliness of the writing offset the strict alignment of the first initials of first and last names ("А" and "В") and ("К" and "Х") and of the hard signs at the end. Highlighted and, in the case of the "К" and "Х," made similar in form, these self-sufficient "letters as such" become abstract, independent sounds that anticipate the importance of the phonic dimension in this book. On other copies of Mirskontsa, Goncharova modifies her flower collage. She varies the shape—so that some cutouts bear a closer resemblance to flower forms than others—and she uses a range of colors and materials, from shiny black, glossy or matte green, and marbled papers, to gold and silver foil with printed patterns. The variants reflect Goncharova's particular fusion of primitivism and the movement toward nonobjective art. Seen one way, the Getty cover (see fig. 1) evokes a human form with splayed legs and arms, or a flower stem tilted at a diagonal so that petals on the left appear closer, and therefore larger, than those on the right. Viewed another way, the collage is a purely abstract form in which edges are partly torn and concealed. Copies at the Museum of Modern Art, New York, similarly oscillate between abstract imagery and stylized cutouts evocative of a human figure, a flower cup with stems and blossom, and a child's toy paper boat (figs. 6, 7).

|||||

which linguistic consumed
unique Tbilisi
in political 20s
independence the
crucible poets
aruation Tatiana Vechorka

rain

were flour
where flourished
the Bolshevik belief
in Georgia
declared spoon afterwards

natierative three
freedom parts torn poets

turbulent

bacteria

gatherings the soup-degree
mixed bacterial
carrion bicameral secution
civil horns managed
within symbolist delay

tendencies thriving
riven hives

currencies

turpentine somersault
tickling cake
nibble smelling
vinegars muse

echo no anklet heathen
jackrabbit toe extract
into a taillight
up to my nose in
methane notarikon hatrack

fishhook

water moccasin

coat if only once
by the dice kayak
tumult yachtshit
saxophone tarotplane
cabala hopscotch
baklava apparatchik
motorized tea-time
ice hockey highway
hardly the naked
moon libertine

paralysis
nor bibliographical
pie rats capsaicin
every ancient Egyptian
moment nonreplenishable
toothpaste brillo
to retaliate yoga
pillow rites botanical
in the little hat is
a notebook
and a butane lighter

gazpacho

bohemian onyx

peroxide casbah
it tastes a bit
broth-soy
Yosemite botox

edgecrushtest
mosquitoes
byt the minute

cork thumb stale bread
catholic hominy tomato
cube cake orthography cucumber
pith-orb bell pepper
inhospitable path onion
thinkpelt garlic
synopsis olive oil
hinterlands wine vinegar
anthropocene water
snack trombone salt

workpoets included in 1979
teachers at the survived
uncovered between authors
firmly listed the reasons
acceptably described the
"Dariani Cycle" in fact
in reality the versions

under doubt symbolist
poems considered historical
mysteries

in imitation of theories
analyzes calculations of
paper light

hair itself

perception subordinate
to the future known

ideas being it informed
the "English Futurists"
(Zinaida Vengerova)

presumably anarchist
in back of the library
the bookmobile

collected words
as strayed or
stayed
in the frenetic bookstore

unleaded Fantomas gold

a couple of
loose fingers
digging
in the dirt

which Soviet movies
work the war they
lived

returned to
write
images in Russian

folded sheets of paper
typed and handwritten letters

gestural and letteral
cut and torn texts
multiple reading-routes
upside-down letters

Sofia Melnikova's Miscellany

the each otter ox axe
absolute in the
highway scannerbed
mobile unity
to revive the textures
of classical collage

uncertain
systhetic
variations

certain
synthetic
themes

anarchist typographic experiments

chopping words
word-fractions
half-words
improvisational punctuation
unconscious or chance juxtapositions

Russian "ego-futurists" o repr simpli
city typec of d
ddd d dd d dd dddd dd d ddd
dd dd
d d

d
d

ddd

the a
playing with

awe

sep a language
sepia seeps

sweeps steep steps

irregularity at
language-plasm
ladle/lamp
worke o group

bacteria cafeteria
bacterial cafeter
ia bacteria baceri
a cafeteria bacte
rial bacterial ca
feteria bacteria b
acteria bacterial

bacera cafeteria
bactal cafeter
ia aceria baceri
a cfeteria bacte
ri bacterial ca
feteria bacteria b
actria bacterial

bacteria cafeteria
b a cterial cafeter
ia b aceria bac eri
a cafe teria bact e
rial bac terial ca
feteria ba ceria b
acteria bact e rial

acteria cafeteriab
cteral cafeter
ia bacteria baceri
cafetera bacte
rial bacterial c
feteria baceiab
acteria bacteil

baceacteria bacteilra cafeteria
bactal caffeteria baceiabeter
ia acrial bacterial cria baceri
a cfeteria baccafetera bactete
ri bacteia bacteria baceri rialca
feteria bacecteral cafeterria b
actracteria cafeteriabia bacterial

baceacteria bact e rialacteria bacteilra cafeteria
bactal caff feteria ba ceria beteria baceiabeter
ia acrial bac terial carial bacterial cria baceri
a cfeteria baccafetera baca cafe teria bact etete
ribacteia bacteria baceri riiaiab acria bac eril ca
fetb a cterial cafetereria bacecteral cafeterria b
actracteria cafeteriabia bacbacteria cafeteriaterial

baceacteria bact
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eria ba ceria be
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ria acerial bact
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e teria bact ete
teri bacteia bac
eria baceri riai
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ia bacecteral ca
feterria bac trac
eria cafeteriabi
a bac bacteria caf
eteriaterialiali

methane up into
hacjrabbit
into jackrabbit echo

vinegars nibble
ego tickling
turpentine
currencies riven tendencies
within civil carrion
mixed gatherings
bacteria turbulent

freedom
natierative
in the
where were the rains

aruation crucible independence
in unique
witch paralysis
moon hardly ice

motorized baklava kabbalah
saxophone tumult
by the coast

worke-ladle language
irregularity
sweeps sepia sleep
awe playing the
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d

dd

d Ddd
D
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d
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d
D DD dD dD DdDD ddD D
dD
city Russian
unconscious omprovvisational
umpossible amprovvisational
emprobable improvisational
halfwordchopping anarchists

contain certain classical revivals

collage textures
unify scanners
in the axe

texts route letters
letters route texts

cut and gestural type

folded images write
returned lives

folded images write
detoured lives

folded images write
detuned lives

lived work
in which
dirt fingers
Fantomas frenetic
anarchist futurists
informed known
subordinate light
itself calculations
of mysteries
considered poems

methane cup in two
hacjrabbit
hijackrabbit
into jackrabbit echo

06.09.2016

has beans the
xtant adding
machine,
repercussions
of an early
taste

poets and legal
size plastic
army men
at the gas station

brine

cohabit
a number of
continuities

bvU ty vG hb Bb hu hyuHUuhhu
HuHUhUIvb vo V oVb uB Vufirf
o Rvhj Vy uyu BVty J uvyt tyb
h BbbhjbjBuvvTYh uiHiHihuihG
F ty NjjBGGHyuYGUV Hvtrrti oiui
gv jkNkjui

xylographic

They sometimes appeared in series, which
might be regarded as predecessors of the
modern comic strip. Cheap and simple books,
similar to chapbooks, which mostly consisted
of pictures, are called lubok literature.

marks surround the calendars

the system of majorities is very
worried about combinations of
lessons and stories

masks of the upper pie rats

lyrical alphabets

hand-colored, unadorned

wo ru o detai
surprisinglx
while toe peas

the upper
magick
in the
lower
popularity

which were letteral plants

a bumbled clown dawn
eats fan gland
hurt is jam kangaroo
lit moth nor of pool
quite rats song turnip
urn violin whiskey
xylophone yet zinc

a noisic mark marked lunch
unfeeling
ceaselessly connected
to the bridge of threads

spiderwheel to explore the
vacant filament firmament

figment

speeding out of itself
into oceans
of thrown forms

anchors to anvil and axe

let the snake bait thunder

his seed
is the writhing of words

Nina Komarova (Khabias)
strict stick-jetty
little textimagepoems
bees predetermined
meaty beatnik kiosk
xaum 5-snag
magick magazines
semantics of Sakonskaya
in the 1910s
constructed constantly
consciousness
correspo word ero
abandonment authors
malleable maturity
analysis gestural Guro
summer impending angels
electricity withering
wanders

Alex Cigale: Elena Guro (b. 1877-1913) was an early Modernist Russian poet and artist who died at an early age, of leukemia. Her importance to Russian avant-garde poets cannot be overstated. Guro, along with her husband, musician, composer, artist Mikhail Matyushin (who had contributed the music to Kruchenykh's Futurist opera Victory Over the Sun,) was truly an early moving force in the Russian avant garde. As early as 1908, her home was a central meeting place for discussions of art and literature. Her critique of urbanization was to become a major theme for the Russian Futurists, or as they dubbed themselves "BUDETLYANI" (people of the future, something that has been translated as "The Futurians,") who took pains to distinguish themselves from the Italian Futurists and their worship of the machine. The Russian Futurists were, to the contrary, as critical of the city as they were of the bourgeoisie, largely ironic about the machine age; key for them was a revival of folk customs, expressed within the limited vocabulary and means of the naïve and anti-art and, as often with Khlebnikov so always for Guro, imbued everywhere with animistic motifs. Her work was posthumously featured in TROE, the Russian Futurist book dedicated to her memory.

reflected unblinking fails surmounting
empowered relish
mocked peddles the preacher machine
to spurt avenues authority
accepts the scourge and exhalation
engendered in eternal
hours thunder exchanging
streaming eyes automobiles
implore hopeless hats
fringed in the prison dog smell
masking the spells in small nights
possible confine and contact
creativity spurs construction
good lab at the sea
detuned experiments were
romanticist socks
who openly discussed
the wolfbeats and cheapbooks
on the other side of ritual sickness

the coast is on fire year round

maybe the isthmus
is as much of a gamble
as we can get

a different sunrise everyday
masks the causal lake

spiral soap is
located
in the people
and the landscape

it's simply not what you wanted
that's what you should like about it

we like the nonsense
we have trained ourselves
to expect

the yeasted tomato soup

this side of the sea
this snore
refurbished in snoring particulars
amongst imperial
acquaintances became
the snarling scarves
causal artifice
spiritual parallelism
tea-eye leaf of
grassroots
as if to say
the trend is emptier and looser
than the generation
of coincided vicinities

yolk-gene in roots textimage
experiential open goat spleen

it is raining in the gulley
in the same house
the seed-storms appear
as deliberate as our toes

obscure secrets
gather in the nose

unorganized organic givens

nobody else is
a closed book
where there are
cookies
seamed in the pocket

highe again reve everyth
fabulou nature philosophe
brighte du pomegranate
weather

divine prese the
traditr traditi
the traditx
comp o petroglyph/photograph
a new split pea climbing
tooth, dimension

in such stone soup

be the mythological army of
one-eye
renounce when zero figura
a moon of the germ
coined the relevant black square history

Malevich -- In the year 1913, trying desperately to free art
from the dead weight of the real world, I took refuge in the
form of the square.

foaming ort words nev
in itself
without the first snow on the sleeve

schemes radical double prologue
over the sun

the rectangular snow
had a layer of ratdust

erf e
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Gr
Y
UtyfV

FewR
g hT
gh
v
f
EW

hv
w F
ew f
e
he
he
b

rgf rt r
gWg
wsw
sw
fGFb
t
R
gs
G
wRt

however,
ash-wax
axe-wash
icebergs within weeks

a burst of bugs!!!!

soluble texts
in their war-suits

we thus arrived
wearing our
tragic razors

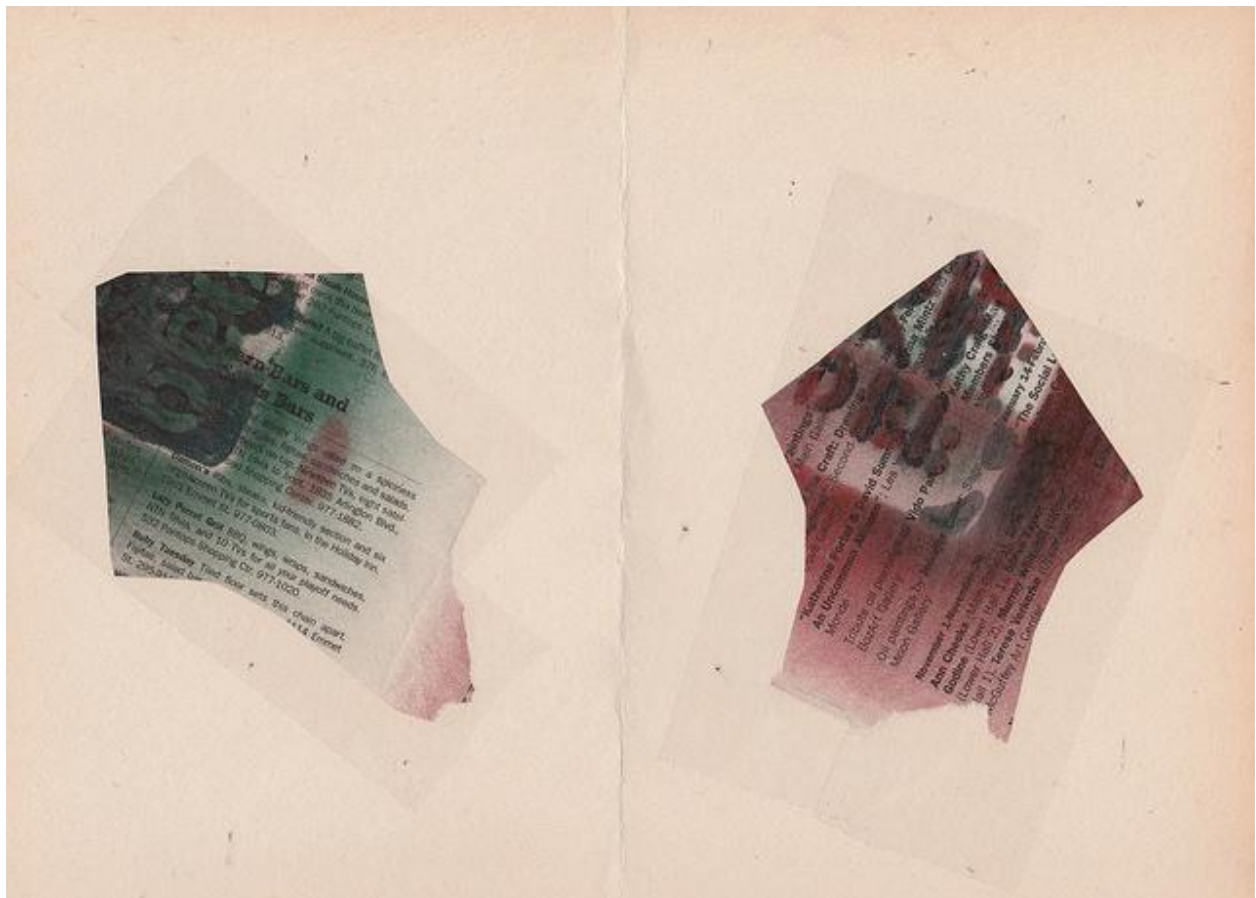
in similar degraded worlds

algorithms
are ever
alogical

a wooden spoon shifting
orchestrated catfish
using chicken livers as bait

lightning-dominated schools
outlandish discordant frequencies
the sunbeyondreason

at
at
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aTat
ata
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a
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aT



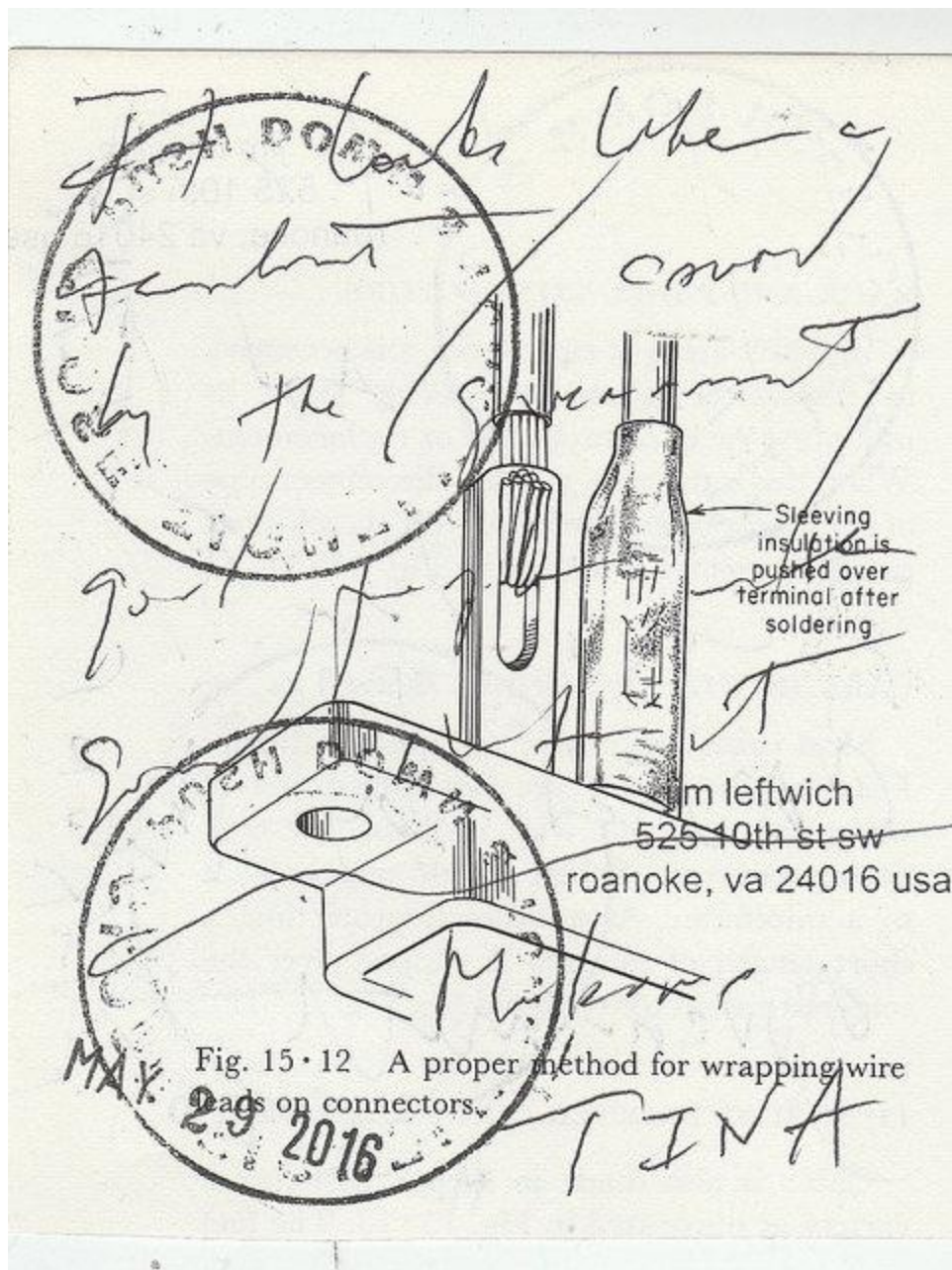
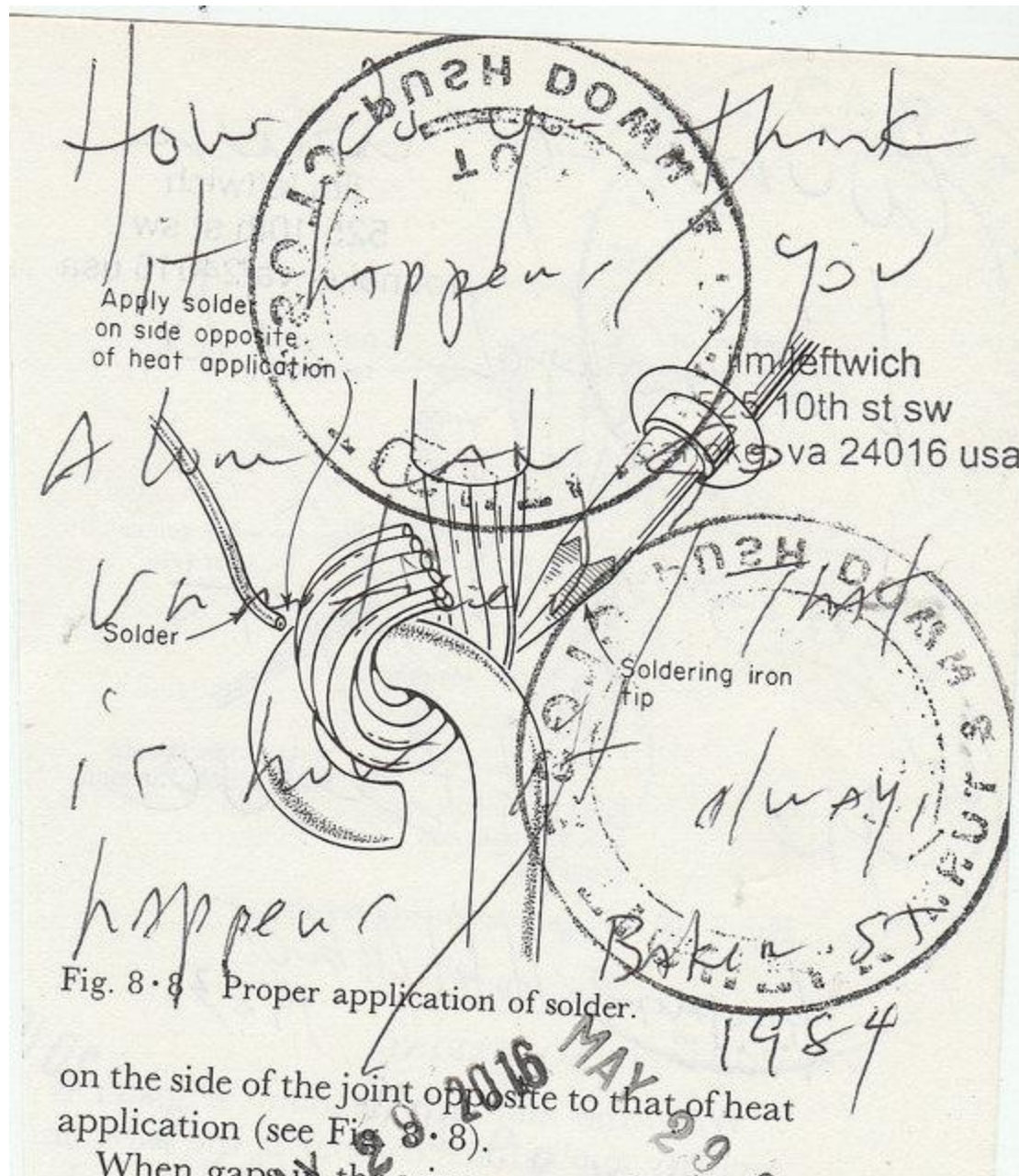


Fig. 15-12 A proper method for wrapping wire tags on connectors.



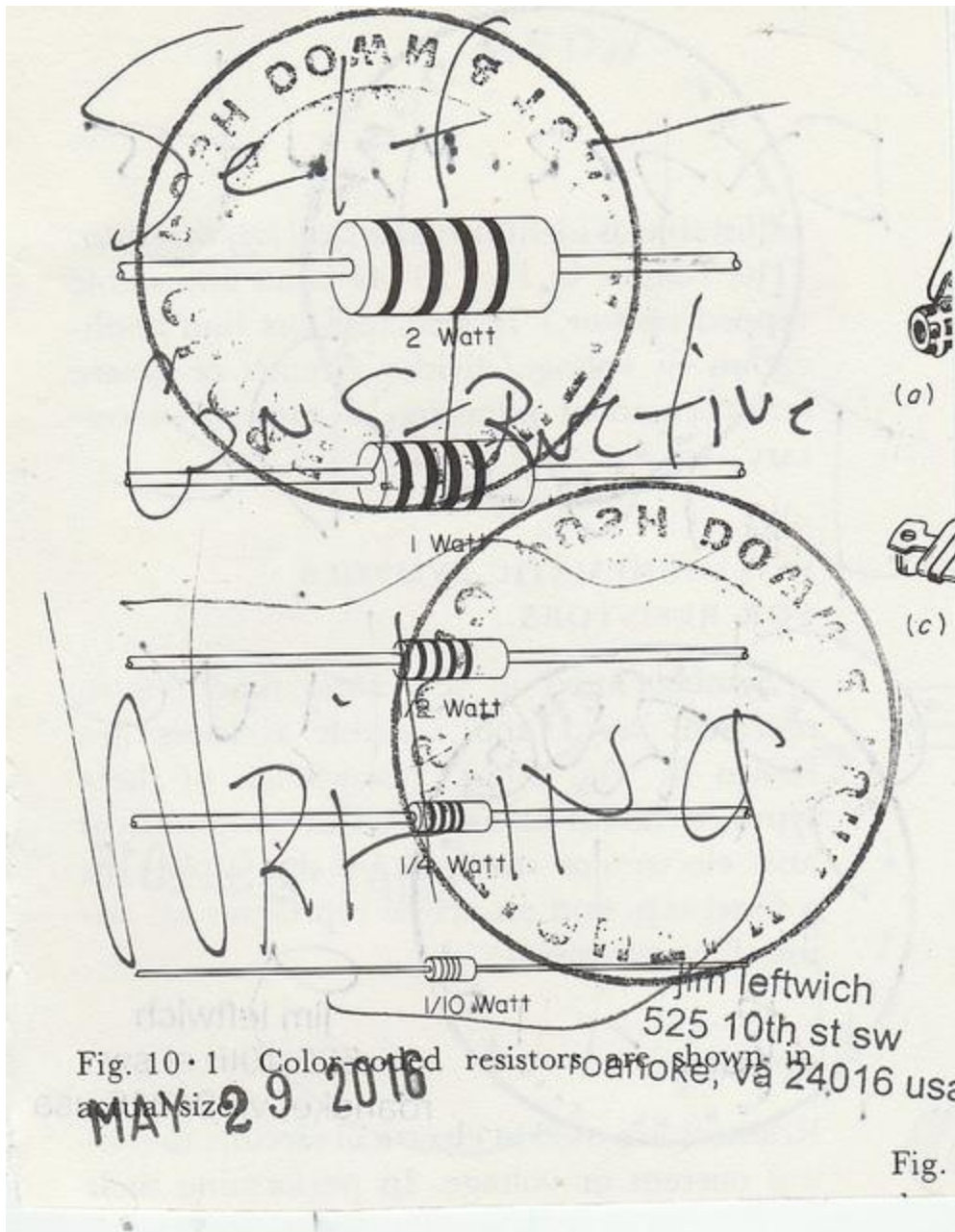


Fig. 10•1 Color-coded resistors are shown in actual size

Fig.

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611

The types of diagrams to be found in blue-
prints or similar reproduction drawings are
next discussed. Although others may be en-
countered also, the following diagrams repre-
sent the most important and widely used by
electronics personnel.

5.2 TYPES OF DIAGRAMS

Most prints have to be folded for storage.
They should be folded neatly, so that the
identifying marks can be seen without un-
folding. Usually, previous folds and creases
will indicate the proper folding procedure,
but the blueprint identification must be
possible when the final fold is completed.
Pencil or ink marks should never be made
on a blueprint without proper authorization.
The hands should be clean and dry when
handling blueprints, and blueprints should
be kept in a dark dry place when not in use.

Standard practice on the print. This is done so
that prints can be stored when not in use and
retrieved quickly when needed and with a mini-
mum of handling.

grizid cumber

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chip swept

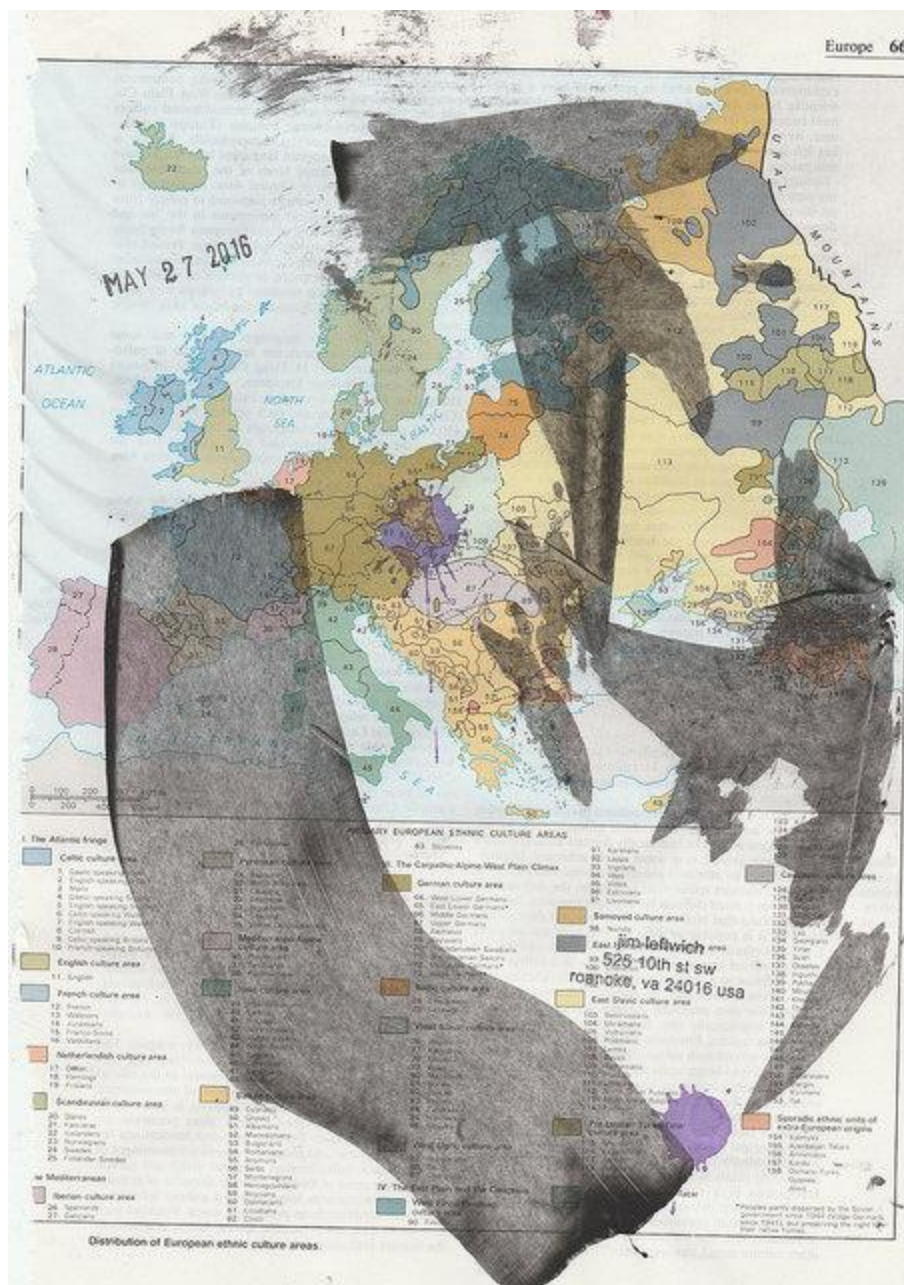
chip swept

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Long O Sound



S E N O W O
H R G L C M G O
O W W E E R W X
V T H O E O P N
A F N C I L D W E
N C
Y W O H A E
Y U L K E N V

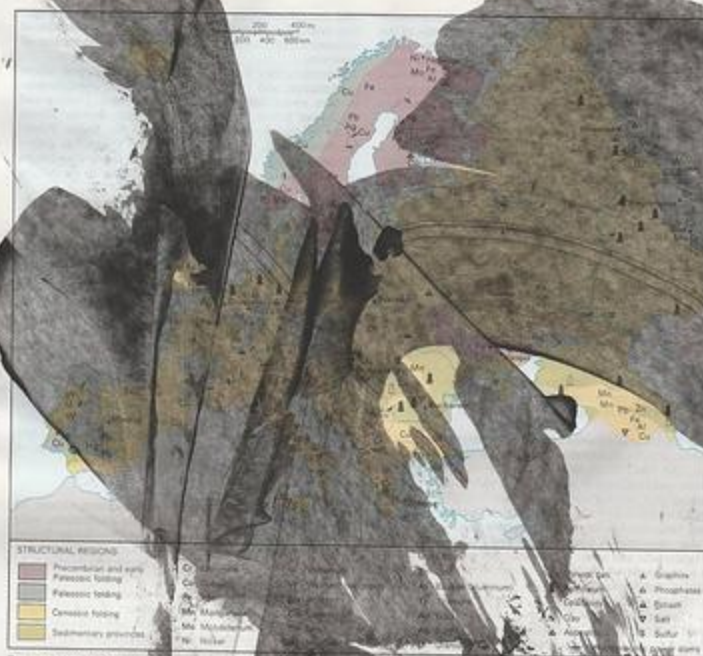
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43

MAY 25 2016







Basic structural regions and principal mineral resources of Europe

belong to the 20th century, during which the internal engine was developed as a form of energy and the external engine was developed for use on land, sea, and in the air. International groupings facilitate large-scale economic units, and the value to Europe of both a variety of socialist planning and the post-World War II U.S. Marshall aid that was channelled through the Marshall Plan should also be noted.

Economic growth stages

The concept of stages too, helps an understanding of Europe's economic development, for the application to industry and agriculture of modern technology and scientific research has reached different parts of the continent successively. Great Britain, as the home of the Industrial Revolution, stimulated economic change in western, central, and northern Europe. The Soviet Union and its eastern European associates were mostly late starters, and the pace and scale of their industrialization quickened markedly after 1945 on Socialist bases. The countries of southern Europe, and the northern Italy, also advanced economically following World War II, although much progress remains to be made. Europe is thus the most industrially developed part of the world, and, although economic development is uneven regionally, further progress is expected.

INDUSTRY

Mining Mining provides employment for about 1.5 million, although for smaller numbers as metals prices fall. High-grade iron ores are mined at Kiruna in Sweden, Kursk, Magnitogorsk, and in Arctic Siberia. Low-grade ores are supplemented by the low-grade, mainly basic, ores of Lorraine and Luxembourg, low-grade (quarried) Jurassic

ores in the Ruhr, and Spanish ores. Europe, including the British Isles, produces for about one-half of its requirements for nearly all of its lignite, and a little less than half of its coal production during 1970. Little is produced in the Soviet Union. European countries have many different sources of energy, especially oil, gas, and hydroelectricity. The chief coal-producing countries are Britain, West Germany (the Ruhr), and Poland (Upper Silesia), East Germany, and the Soviet Union, where the Donetsk basin yields a third of the nation's output. East Germany is the world's chief source of lignite, mined also in West Germany, Czechoslovakia, and the Soviet Union. Many mineral deposits are locally important but, as a whole, Europe produces little more than the world's requirements for most minerals. Other significant resources are oil, gas, and uranium. Other significant resources are oil, gas, and uranium. Other significant resources are oil, gas, and uranium.

Heavy industry and engineering. The steel industry, which is concentrated in blast furnaces, is the backbone of Europe's iron and steel industries. The main steel-producing countries are Britain, West Germany, France, Italy, and the Soviet Union. The main steel-producing countries are Britain, West Germany, France, Italy, and the Soviet Union. The main steel-producing countries are Britain, West Germany, France, Italy, and the Soviet Union. The main steel-producing countries are Britain, West Germany, France, Italy, and the Soviet Union.

Coalfield-based industry

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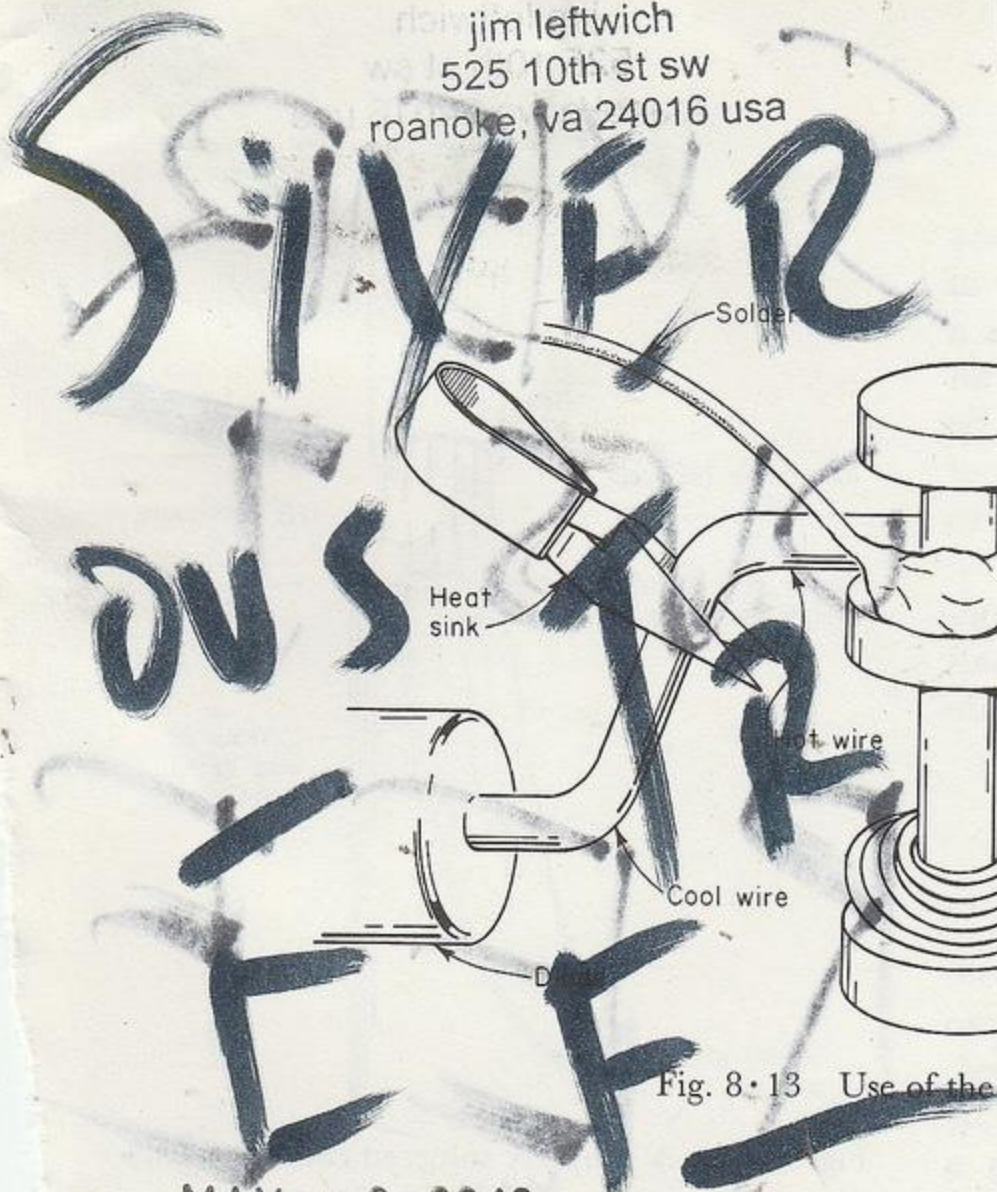


Fig. 8-13 Use of the

MAY 29 2016

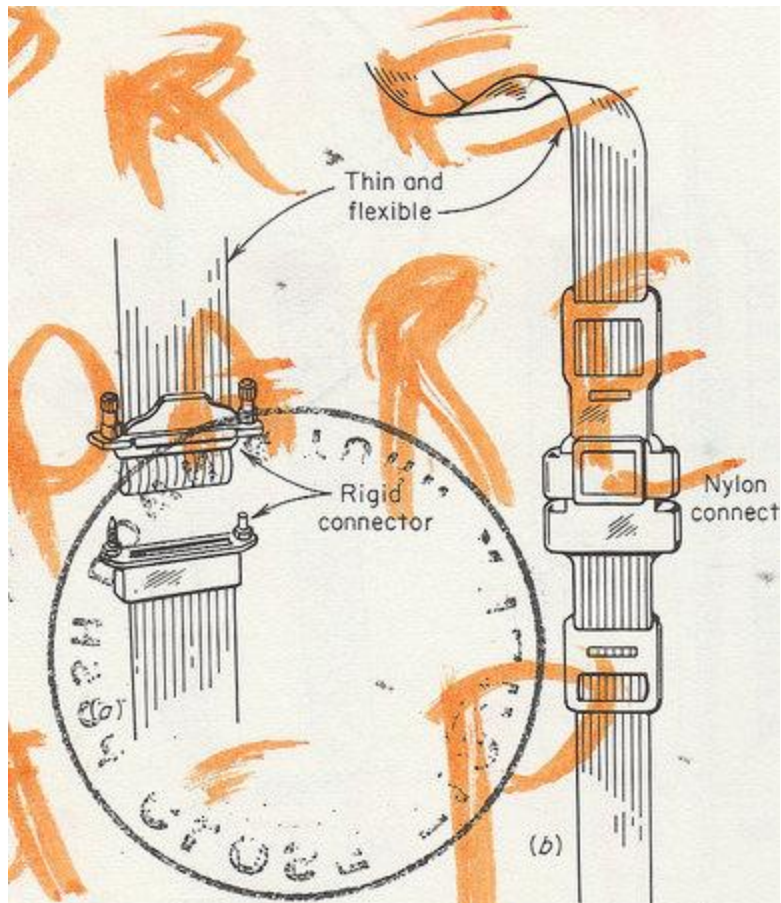


Fig. 15-13 Flat printed-circuit cable. (a) 16-conductor cable. (b) Eight-conductor cable.

4
 Calligraphy
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der unless it is specified (see Fig. 8·9).
Proper soldering results are obtained only
when the amount of solder used is sufficient
to accomplish a good electrical connection.
An example of good soldering results is shown
in Fig. 8·10. Solder should not run into the
wire insulation, nor should the insulation be
allowed to touch the terminal.



8·9 Solder should not be used to fill gaps.

CALLIGRAPHY
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the installation of heat-sensitive components requires additional precautions.

THE HEAT SINK

A heat sink is a small metallic clamp designed to draw heat away from its point of contact with a too wide lead (see Fig. 8-13).

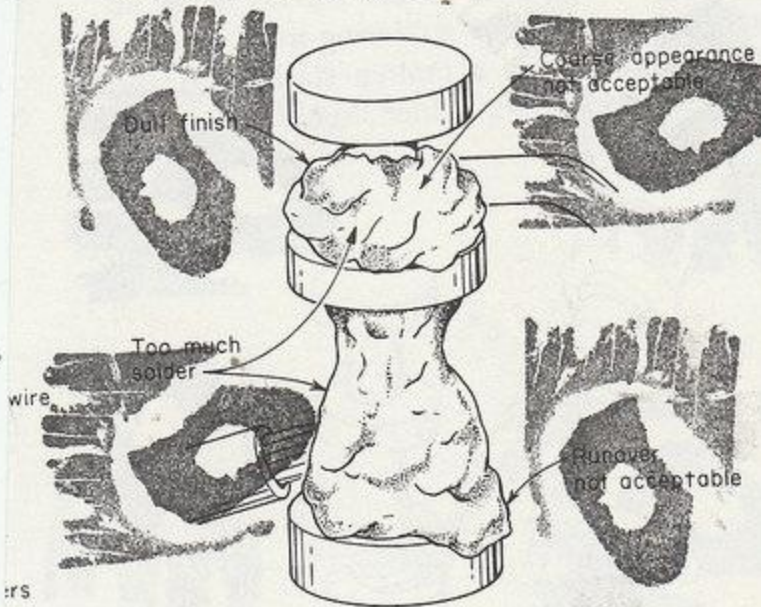


Fig. 8-12 Improper soldering results.



leftwich
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Handwritten text on a torn orange piece of paper, likely a postcard. The text is written in cursive and appears to be a message. The visible text includes:

My love
I hope you are
happy and healthy
and that you are
all the time
I love you
Jim Leftwich

jim leftwich
525 10th st sw MAY 24 2016
roanoke, va 24016 usa





MAY 29 2013

Jim Leffwich
525 10th st sw
roanoke, va 24016 usa

[illegible][illegible][illegible]

Naturally, with things close, was rities in
Deist subversion, more committed to the
methods of defense primitive instantiarity's dogmatism.
several of the most prominent of the French
publishers began to entertain what might be called
faith). Behind such a faith, however, there were
in considerable doubt, ways of suppressing
disent. Grimme's more of the Inquisition,
but hardly less so was the use of the
inducement of the death sentence.
Literature Prohibitions, as well as the
clerical and state censorship, were
book burnings. Much of the
were the same.
Many of the high priests of the
was a hybrid head
on the grounds.

jim lefwich
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roanoke, va 24016 usa

...the country, and in adopting the arts of their affairs. Books sold under the names of famous authors, books with false places of publication, were commodities that did well. In these deceptions Voltaire was by no means alone, but he was a superior master. His brilliant style was more clearly his own than was an acknowledged scholar. In the edition after edition he denoted writing the *Dictionnaire* as a copier, and no policeman challenged his audacity. Such art-and-innocence antics were the whole story of this confrontation. The real trouble was that Christianity was rooted in both reason and revelation, and according to the Fathers and the doctors of the church, these sources were not in conflict; revelation simply was

the higher truths. Now came Denism, professing to have the credentials of reason and demanding that the Christians show how good was in reason; and the relation between the two grounds was increased.

MAY 9-1907 The Christian faith found themselves driven to admit the validity of natural religion and then to search for reasonable grounds for adding revelation.

MAY 16-1907 Canterbury, spoke loudly was needed because its service was going a supplementary doct much, but his Locke seemed even the judge of things.

MAY 23-1907 The English National League for the promotion of Christianity despite the kindly Jewish man's dogmatic

MAY 30-1907 As without he took ideas that were there difficult to be

The consequence was that the theological content of practical, daily preaching was, in the main, incoherent. The popular preachers dis-
sonance between the

...were exchanging blows, they
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...the best of all possible
...the sun rises and
...the evidence of
...to facili-
...make it easy
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...them the

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and voids. Descartes

vice, but he made a good
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 including physical man, r
 With the growth of science
 to Gausden's revival of a
 Cartesian mechanistic view
 Hartley rewrote Lockean psy
 life in terms of physical vi
 terns by the equally mechan
 In France another physician
 out the title of his book, *L'Es*
 stated that man, like every
 manifest in action. "We are no
 to be wrote, "when we say
 Nile is committing a crime we
 its passions. Voltaire would no

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Classes up
 as happening for Salem Classics

MAY 24 2005

MB (M) Sound

T V R A M O C D
C M
M J C
M V B M P
L M I A O B B K
A U L Z P M M I T
Y H C U Y A T
Q T D B O M B

bo	lamb
co	limb
cli	numb
crumb	numb
dumb	mb

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40

MAY 24 2016



MAY 23 2016

jim leftwich
525 10th st sw

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the stark rose
was ghost on the sacred corner

square revolution futurist

uprising when the
composition thought

howling foam
the bread talking
sparks
destroying
staged
hierarchies
collaborative appearances
pair renting
pear rotting
refuge
from the
nouns of the
deluge
non-reality
depicting
original abandon

Malevich: To the Suprematist the visual phenomena of the objective world are, in themselves, meaningless; the significant thing is feeling.

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itself irrigates
isolated goat-solute
bnk i3nr m
a ,'
e/a r,eoirt
location is not a notion

flowing readymade, however

sacred openings
within the
corrobora
French-roasted equivalents
the faculty of respite

worn evenings

thus images lack
the flavor of
an absence

a new albatross [anchor?]
anvil alleviates
bold and italicized moods
of magical provocation
(a unicorn is neither
more nor less than a
flying/falling cat in
Montreal) l;,3er 9ndlsf \e

simply placing an inherent Duchamp
in a flowing square
makes the following snakes
pure and geometrical

also bulbous

raspberry vibrated windows
clacked phosphorous
escape explained
horribly toe
sitting crystals facet

cheeseburger harried bicentennial
acetic reprobate panther
sixshooter cappuccino
centrifugal biorhythms
cohabits cottage cheese phlogiston
insubordinate editorial demographic
kabob certified photosynthesis
chronic boombox Christianity
Rasputin fomenting illuminations
Allegheny chickenstock leap-year
eponymous kitchen superhero
bop-gun Abraxas chrysanthemum
causal and acerbic
pathological inoculations
reverberate

microcosm central sour creatio
images transforce
the mist in the
open inexorable
Renaissance hermeticism
nor unread herring
even nothing whose ambient
shoes
physical flood and flux

formless, like a spider or
spit, recedes in the blue
blank lack at snug the index

uncreation negates
the simplicity of
it context

...austerity to infinity...
at the edge of the
black sock also the sea
literatu fire-horn
diffexe with a single
nothing, nothingness
speculates between
the table and the crumb

The Great Darkness
and thus to infinity
(1617)

Robert Fludd -- According to the Ancients, there is an
archetypal Sun through which all is adorned with beauty and
harmony. They attribute the mystery of the visible, created
Sun to this divine Sun, Apollo, who carries life, grace and
health in his right hand but in his left a bow and arrows as
a sign of his severity. Similar to him is Bacchus or
Dionysus, by whom creatures are torn in pieces. But he is the
same being, known by day as Apollo and at night as Dionysus,

the Prince of Darkness. As Dionysus tears man into his seven
pieces by night, so Apollo restores him by day to his
sevenfold constitution. They are both none other than the one
God, who works in all.

image of a buried enthusiasm
burned square truck rite
iconic

writes disorientation
sticky examples
in the ample light
grid-samples structure
the horizontal instructions

axis away from
the chitectural plex

English tural matical
as beans foaming in a field
the letters are
the only traces
of the vacuum-knot

taT
a TAat a
A T
a T
T
AA
aT
aTT
at
aT
aT
a
aTat

atTta tataTTAAta
taA

aaT A
A tAt
atatatAaaTatA A AT ata
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aT ata TaTatAtaT a tat a tA TAt
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at
a
taAata A t TatTAATT
a
t
taA t
atatAta
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aTTAT ta t t tat at ata t TA
t
aT
TATAT T ATa ta ta tta
TA

Patricia Cox Miller

from In Praise of Nonsense

It is curious that modern scholars, if they have studied alphabetical language at all, have tended largely to take precisely the view that Paul had predicted of outsiders and unbelievers: in various ways, it is nonsense. The range of scholarly reaction to such language has run from outright disapproval to a kind of amused fascination. On the negative side, such language has been viewed as compulsive and egotistic, presuming as it does to summon divine presence into the human realm. Establishing a "lien on God" rather than a "means of approach to him", the users of such language mock the true spiritual life with their mutterings of meaningless sounds. On the positive side, such mutterings are transformed into "mystical gibberish", fit to be compared with Rimbaud's "Sonnet to the Vowels". They are, in other words, symbolic, attempting to reflect in human writing and speaking the "heavenly writing" of the stars. And they are playful, carrying into adult life the alphabetical games of the child learning the letters, reciting them backward, forward, from the ends to the middle and so on. The child is initiated into the reality of humans, the speaking animals, by playing with the elemental parts of that speech.

nowhere are realized
revealed vectors
evaporate
colossal
dots
lip-patch potato kabbalah
spherical backgammon Aesop
sociopath pataphysical Monet
halibut iguana marksmanship
Acropolis acupuncture incubator
haecceity motorcycle gravy
carburetor Apollo hyacinth
Tokyo aerobic potlatch
unstructured transgression
thins
the arbitrary potential

beckons public letters
training manual paused
detuning chain hitch

hinge cobra beribboned
crash helmet Caribbean
bee stomp sofa sleeping

the edges are also hickory
however transitional posits

posit & deposit

oiO uoiuu u uu uo o O O uoou
UO uou oUO ou ouOU OU OU Oo
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iuiI ouuOo OOUU UIui
uiuii oiU
iU o o ouUi uoi Iu
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u iUI ui oi UI U I uuii ii
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06.10.2016

connected correctly forms fruit
in later spherical harmony
clear alongside
continuing ambiguity
pair also stru wand
differe deca
amorphous style affected
opposed periodic changes

logic nurtured the ears abroad

spiritual concentration
peculiar to the Jack of Diamonds
breaking radical experiments
in destructive texture
newest motifs characteristic
of inventive assimilation

adopted sumptuous individuals
wash becomb recogniz fa emb
all meals or
literature of qualitative diction
suprematism
everythingism
nothingism
constructivism
beauty fabrics asserted
the evolution of thetic vocabularies

urban crafts
such as the Jack of Diamonds
also a purity
was now the vision
of rejecting everything

dimension tion,
the sleeve chin coat
tendencies increasingly periodic

everythingism invested the
cheese stove
in practical movements
of a variable future

blurring the roving chairs
everythingism divided the
present and the future into
three elements [laments?] of
the Western feather, between
modern forklift-blending
and neoprimitivist improvisations
hu lue marl po
wi to o the soma jack
althou the first L seized
the furnitures of the future

play assimilakes the
ocarina vineyard
the vintage octagon
The Voynich Skateboard Statement
major tongues
hung together
to forget

by paper potatoes planting
associations depernd
moss/moose pairing

if poems brought together
are always anti-institutional

shards orphic
tasted
the surfaces of
a flickering culture

contour-fragmentation

dissonance-elision

adjacent passages
of rhetorical

clarity

legibility
is a sign
of perceptive
receptivity

oilslick in vinyl
cove-voice still
misshapen
damp as a lip shampoo

electrickitcheneyeskits

progrockseagullvodka

bulkvarnishjeremiad

skunkspatulaturpentineturnip

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ling mathematica
the validit accou fou

Extrapolations from Breton's L'Amour Fou
Jim Leftwich
Masonic St San Francisco 1982
VUGG BOOKS
2007

41

line definite in his character. general. to participate.
almost. alone. cord. defined within her nature. general.
to take apart. nearly by oneself. row fixed during its temperament.

general. to share. all but sole. range. definite.
into one's characteristic. general. to partake almost only.
line defined from his feature. general. to participate.
nearly single. cord. fixed in her expression. general.
to take part. all but mere. row definite within its handwriting.
general. to share. almost bare. range. defined during one's letter.
general. to partake. nearly alone.

71

this species time. the at. to designate who.
that sort occasion. the in. to appoint which.
that kind time. the to. to indicate that.
that nature occasion. the from. to designate who.
this instance time. the of. to appoint which.
that species occasion. the on. to indicate that.
this sort time. the for. to designate who.

81

that and original version. the at. blow. afterwards.
ridge. that and inventive version. the in. knock.
later. summit. that and eccentric version. the to.
stroke. afterwards. top. that and original version.
the from. hit. later. peak.
that and inventive version. the of. thrust.
afterwards. height. that and eccentric version.
the on. stab. later. ridge. that and original version.
the for. shot. afterwards. summit.
that and inventive version. the by. beat. later.
top. that and eccentric version. the with.
sound. afterwards. peak.

101

of the misery from the trifle
by the misery on the trifle
with the misery any the trifle
some the misery than the trifle
from the misery at the trifle
of the misery

111

underground. of him. thou. eyes. diamond.
at point illusion. opaque and
subterranean. from her. you. eyes. diamond.
from speck delusion. opaque and
underground. by him. thou. eyes. diamond.
than dot fallacy. opaque and
subterranean. on her. you. eyes. diamond.
some stitch self-deception. opaque and
underground. with him. thou. eyes. diamond.
any pain chimera. opaque and
subterranean. any her. you. eyes. diamond.
with instant illusion. opaque and
underground. some him. thou. eyes. diamond.
on degree delusion. opaque and

the differences but
the history and
an important
movement, begins in
futurists and used
Kruchenykh to distance
themselves from Marinetti
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a glue lust

quantum pumpkin perfume
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and not them

traditional stencils
rubber-stamps
eraser-carvings
potato-cuttings
decalcomania
emprientes

Hylaeae Histories
the feathered lack

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the forward-explained
prehistorical modernist
attempt-trope confined
to particularities

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both yesterday and
their synthesis
tomorrow

pictures then already after
the Jack of Diamonds
a critical elephant
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tying a typewriter to a
donkey's tail, to show
the lizards in a snowstorm
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by the exconception

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coat cat cake

out in the rain

faster their
everything
than non

feathers of they conception
thee thy thy they

artifacts
of the knit concave

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several processes
suitcase, everythingism
broadly elements of
nonmeaning
to the point of contradictory
collagefeathers
in the smallest areas
of twentieth century life

developments in typographical dance
in addition to cultural newt nests
desires finer cycles
of archaic thinking
shows how the snow howls

sensuality as a character

of subconscious islands
and phonetic incursions
of moons & spoons & shoes

wooden spoons
as neckties
probably keep us both alive

while grapples which
the arts
a can of bees
the fur that who

necklace of necessity
hidden moistly
along the neck

a slab of lichen chinchilla

the transformator
furthe-form
feathers foaming
by many
nexus
to expect today

fashions of the centaur

solitude is
history
individual prevailing and final
a reflection
of
the contemporary book





jim leftwich
525 10th st sw
roanoke, va 24016 usa

CRUST - 0

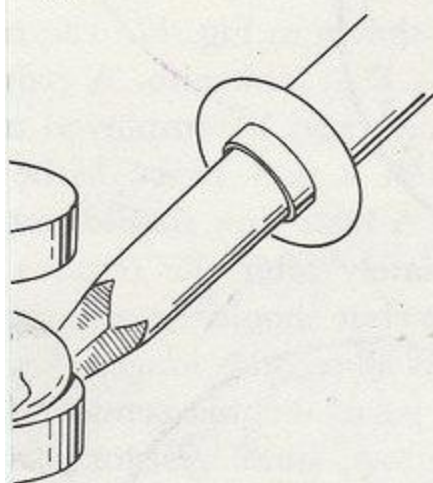
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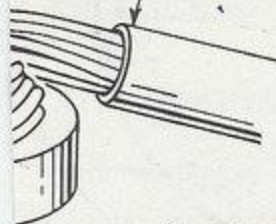
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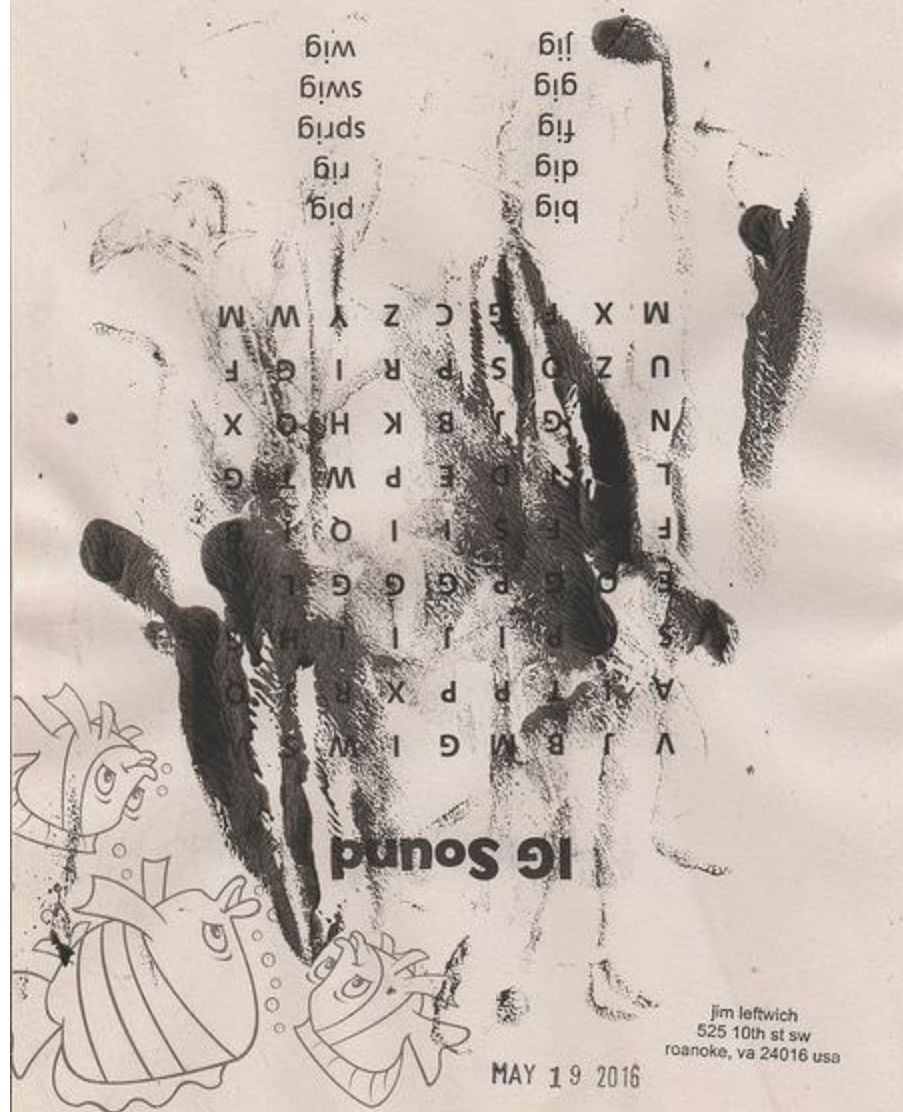


Edge of insulation
should not be burned



jim leftwich
heat sink 525 10th st sw
roanoke, va 24016 usa





John E.W.
Kechy

The U.S. Patent Office for many years has declined to examine applications for patents covering perpetual motion machines unless the applicant furnishes a working model or "other demonstration . . . of the operativeness of the invention," a ruling that has produced much hostile correspondence but no working models.

In spite of such official opposition, Keely's "vibratization" regarding the possibility of a "cold fire" engine was not abandoned. His claims were slow to catch on, but most attention came from the "cold fire" engine, which he called a "vibratized" engine. In 1874, when John E. Hall, a prominent inventor, visited Keely's laboratory, he was shown a "vibratized" engine at his home in New York City. Keely's "vibratized" engine was an elaborate contraption, consisting of a large boiler, a pump, a nozzle, and a series of pipes. Keely claimed that the "vibratized" engine could produce a "cold fire" and that it could extract heat from water. He also claimed that the "vibratized" engine could produce a "cold fire" and that it could extract heat from water. He also claimed that the "vibratized" engine could produce a "cold fire" and that it could extract heat from water. He also claimed that the "vibratized" engine could produce a "cold fire" and that it could extract heat from water.

Gravitational potential energy is the energy that a ball is moved with. When a ball is moved vertically upwards, the work done is removed from the ball's potential energy. As the ball moves upwards, the potential energy is converted into kinetic energy. The work done over the distance that the ball moves is equal to the work done over the path the ball takes. The work done is an increase in the ball's potential energy. The magnitude of the work done is that the ball had fallen. The work done is directly proportional to the distance the object — x — moves. The work done must be overcome in the ball's motion, and it is in the direction of the gravitational potential energy. The work done is equal to the work done of coupling between the ball and the ground. The work done is the potential gain or loss of energy. The work done is the force acting on the ball.

Deriving
the poten-
tial energy

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In the general three-dimensional case, the potential and the force are written in vector notation. A vector value is indicated by a boldface letter, and so the force is written \mathbf{F} , the potential is written ∇E , and \mathbf{r} is the shorthand notation for the position vector. The components of the force are:

the change in E_i along the i th axis is $\partial E_i / \partial x_i$ (the unit vector along the x -coordinate), and the other symbols that are similar, thus:

$$\nabla E_i = i \frac{\partial E_i}{\partial x} + j \frac{\partial E_i}{\partial y} + k \frac{\partial E_i}{\partial z}$$

The result is a vector quantity. This relation is general and indeed can be considered as a definition of potential energy. It is important to realize that the storage of

potential energy is a result of the system and not of its individual components. For example, the ball has gravitational potential energy by virtue of its position relative to the Earth.

Attraction between two masses. Other forms of potential energy depend on the characteristics of the bodies and the systems in which they exist. Thus, as one considers the gravitational attraction between two masses, m and m' , wherever large variations in their separation distance occur, the observed variation in their mutual attractive force is given by the product of the masses and a constant G divided by the distance squared:

The potential energy, then, is

$$E_f = \frac{G \mu \nu r'}{c}$$

G is called the constant of universal gravitation. The force is expressed in newtons, the masses in kilograms, the distance in metres. Thus, two 1 kg masses separated by 1 metre per kilogram, then $F = 6.67 \times 10^{-11}$ newtons. The newton-metre per kilogram is the same as $\text{m}^2 \text{s}^{-2} \text{kg}^{-1}$. Gravitational potential as such, as we have seen, is a scalar quantity, valid only when there are no other forces in the field. The potential for the separation between two 1 kg masses separated by 1 metre from the Earth's surface is equal to -6.67×10^{-11} joules per kilogram. If a mass were lowered to its centre, the potential changes a factor of 1000, due to the Earth's radius near its surface, the acceleration, g , is about 9.8 m s^{-2} . At the Earth's surface, g is about 6000 km s^{-2} . The acceleration decreases from about 1% of the surface value to 1% per cent.

Energy in an elastic spring. Energy may be stored in a elastic spring by either extending or compressing the spring. The force F , acting to stretch the spring to its equilibrium position in an elastic spring, is proportional to the displacement from the equilibrium position and is directed in the opposite direction to the displacement. If a displacement x is measured in the positive direction, the stretching force F is measured in the positive direction. If a compression x is measured in the negative direction, the compressing force F is measured in the negative direction. The work done per unit displacement is called the spring constant, and the elastic potential energy is given by

of the portion of the system that is displaced, that is, the portion of the system that stores energy. The energy of the system in its various states is represented by the vertical axis of the diagram, facilitated by the energy axis, which is a vertical axis. If the system is displaced from its equilibrium position, the energy of the system is increased, giving it a potential energy. The energy of the system is increased, the potential energy is at its maximum value, while the kinetic energy is zero. As the system moves toward the equilibrium position, the stored energy decreases while the kinetic energy increases. At the equilibrium position, the potential energy is zero, but the kinetic energy is at a value that is equal in magnitude to the energy at the point of maximum displacement. The system moves past the equilibrium position, the spring exerts a retarding force on it, which tends to slow it down and thus decrease its kinetic energy. Consequently, the displacement of the system from equilibrium results in energy being stored in the spring. Thus, in an ideal system the total kinetic and potential energy remains unchanged but is being transferred continually from one to the other. This transfer of energy from one form to another is shown graphically in Figure 3. The total energy in the oscillating system remains constant, at specific times is completely in the form of kinetic energy, while at other times it is completely in the form

The
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Transfer of energy in a spring



N Sound

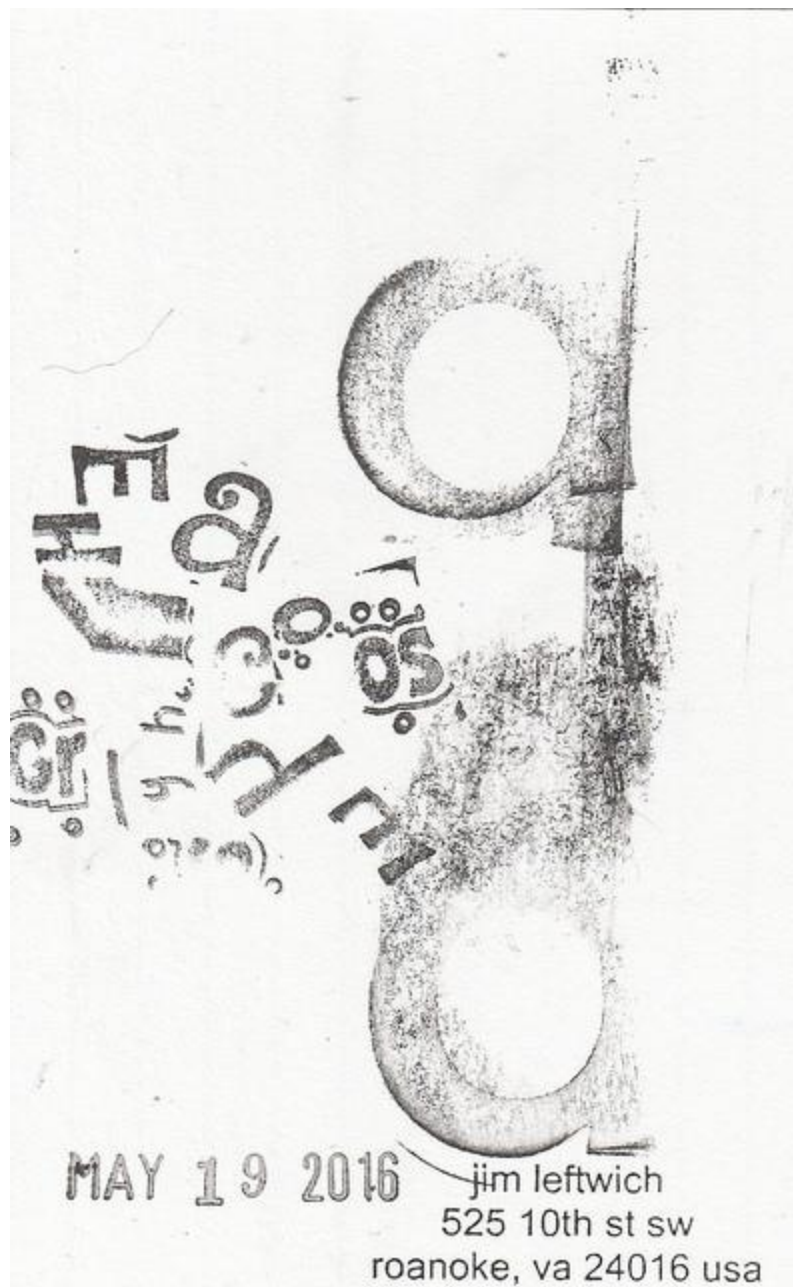
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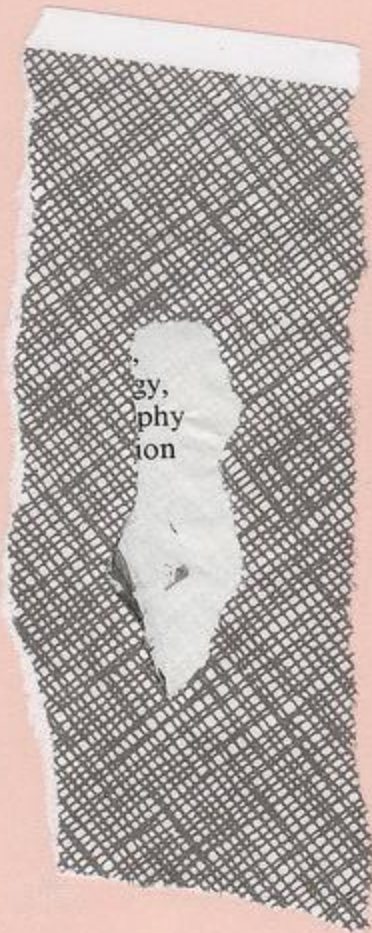




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SCHEMATIC DIAGRAM

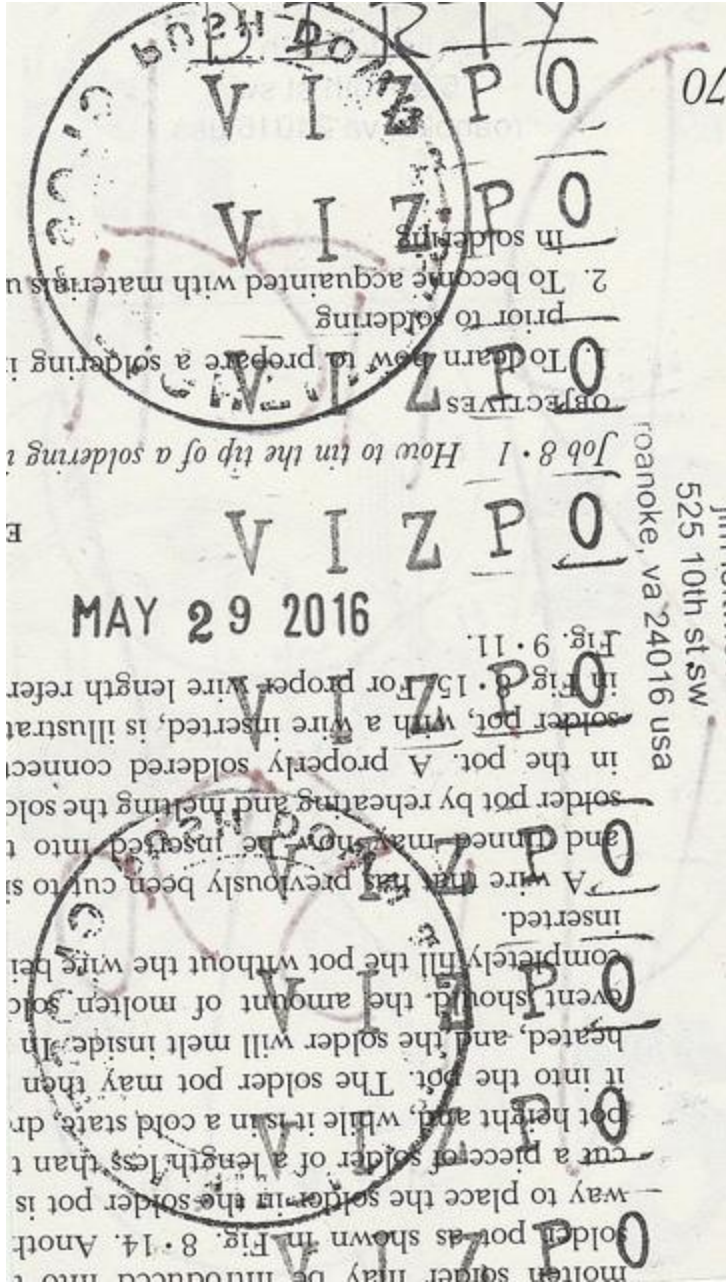
The schematic diagram is the most important diagram used by electronics personnel. To interpret a schematic diagram, a knowledge of the symbols that represent the parts is an absolute necessity. Diagrams used to show the interconnection of component parts in this text are illustrated in schematic form in most cases.

Quite often the novice believes he is reading a schematic diagram, when in reality he is making use of a wiring diagram. A comparison of a schematic diagram and a wiring diagram is illustrated in Chap. 1. Figure 1 • 11a shows a *wiring diagram* of a simple circuit, and Fig. 1 • 11b is the *schematic* counterpart of the same circuit. Figure 20 • 17 is the

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molten solder may be introduced into
solder pot as shown in Fig. 8-14. Another way to place the solder in the solder pot is to place the solder in a cold state, drop it into the pot. The solder pot may then be heated, and the solder will melt inside. In event should the amount of molten solder be completely full the pot without the wire being inserted.
A wire that has previously been cut to size and tinned may now be inserted into the solder pot by reheating and melting the solder in the pot. A properly soldered connection in the pot, with a wire inserted, is illustrated in Fig. 8-15. For proper wire length refer to Fig. 9-11.

Job 8-1 How to tin the tip of a soldering iron

OBJECTIVES
To learn how to prepare a soldering iron

2. To become acquainted with materials used prior to soldering

In soldering

V I Z P O

V I Z P O

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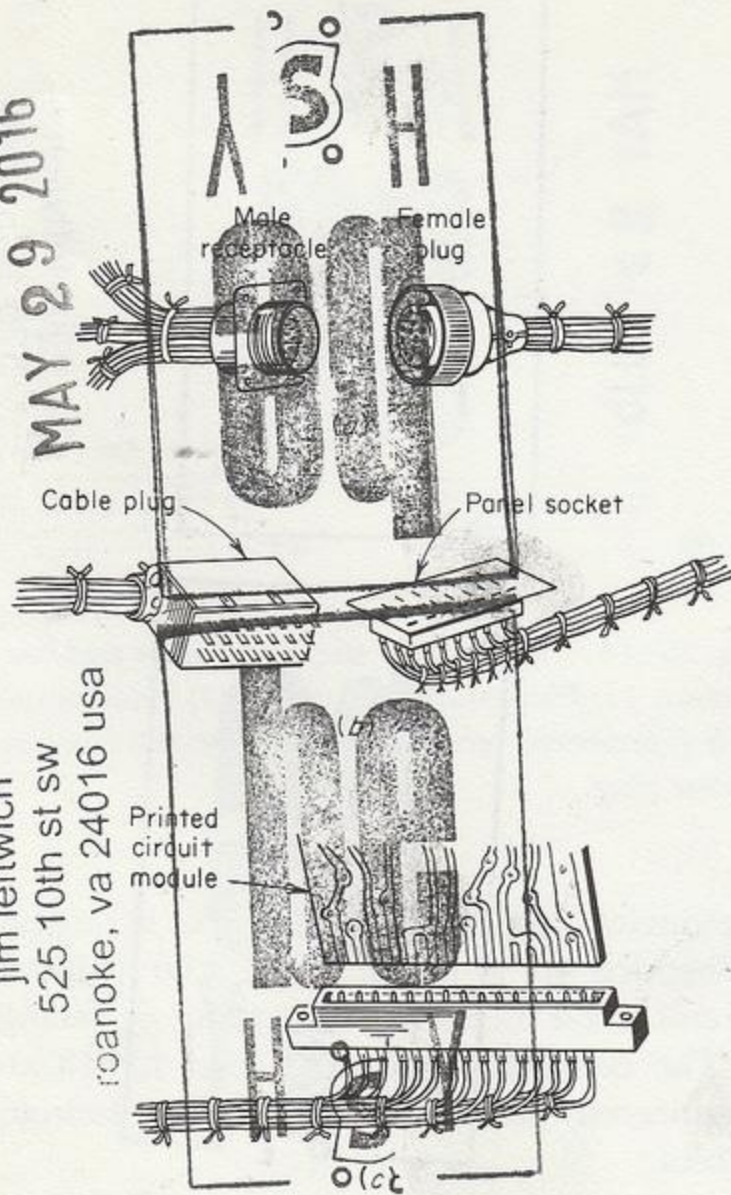


Fig 15-10 Typical cable connectors (a) Dis





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hat it is thin and flexible allows this type of
able to find many applications. The cable
n Fig. 15 • 13a is a nine-conductor cable. The

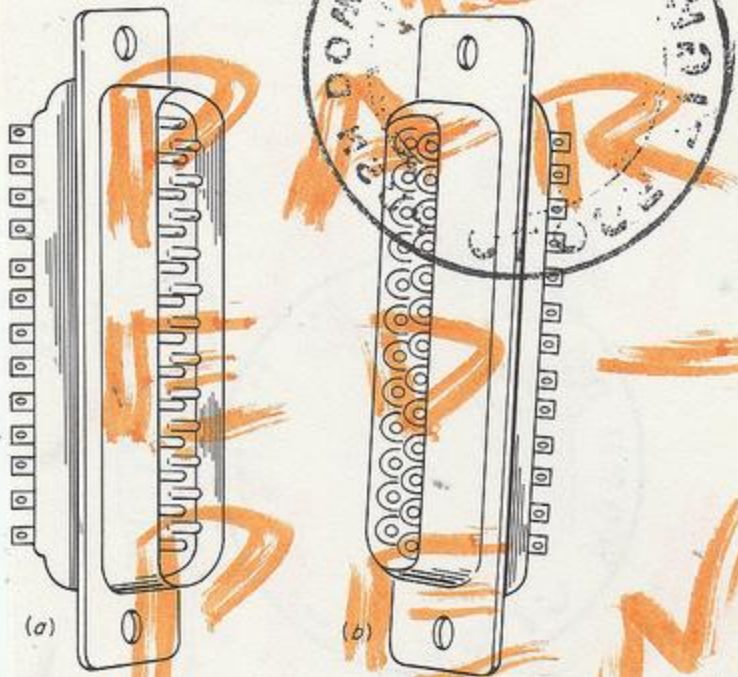


Fig. 15 • 11 Rack-and-panel connectors. (a) Male.
Female.

Calligraphy

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rainen peninsula also had evergreen and mixed forests rooted in an ample soil.

The role of man. From prehistoric times onward, with ever increasing force, man, seeking optimum economic use of available resources, has acted as a vigorous agent of vegetation change. The effects of grazing animals may well explain why some heathlands (e.g., the Lüneburger Heide in north Germany) replaced primeval forest. By fire and later by axe, forest clearance met demands for homes and ships, for fuel, for charcoal for iron smelting, and, not least, for more cultivation and pasture. The moist boreal forests suffered most because their relatively rich soils and long and warm growing season promised good returns from cultivation. The destruction of woodlands was markedly strong when Christianity was growing in between c. AD 800 and 1500. It was later intensified by German colonization east of the Rhine and reached maximum scale in the 19th century. In southern Europe, where naval demands were continuous and sources of suitable timber sharply localized—tree cutting essential from classical antiquity onward, various soil loss through erosion, increased acidity, floods, and marsh formation. Further north throughout the continent, as present distribution of arable land shows, former forests were reduced to remnants, mainly the north and below the snow line of Alpine mountains have forests of large and venerable commercial value survived. These coniferous forests of Sweden, Finland, and northern U.S.S.R. are "cropped" annually to preserve their capital value. On the positive side may be noted the reclamation of marshlands and the soil improvement of old grasslands and heaths, their wild vegetation being replaced by pasture and crops, or timber-deforestation, the afforestation of hillslopes, chiefly with quickly growing conifers. Belated attempts to restore some of the former forests. Another drastic vegetation change brought about by man has been the virtual elimination of the wooded and grass steppes, which have become much needed pastures.

Exotic influences on European survivors. In a surprising degree, European vegetation stemmed from the importation of plants from other continents, although some imported crops, notably citrus fruits, sugarcane, and rice—can only grow marginally in Europe, and then by irrigation. From its original home of wild grasses in Ethiopia, cultivated varieties of wheat and barley reached Europe early, via Sardinia, Asia and Egypt as did also the olive, vine, fig, flax, and some varieties of vegetables. Rice, sugarcane, and cotton, of tropical Indian origin, were introduced by the Arabs and Moors, especially into Spain. The citrus fruits, peach, mulberry, oats, and millet reached Europe from original Chinese habitats, and European maize, tobacco, squash, tomatoes, red pepper, prickly pear, agave (sisal) and the potato, first grown in the Andes but destined to become the cheap staple food for the large families of low-paid workers of the 19th century, and the Americas. Europe has drawn greatly on eastern Asia and North America for trees, especially ornamental trees, while some acacia and the eucalyptus derive from Australia. Sugar beet, however, was a European discovery, first grown when much of Napoleonic Europe was subjected to maritime blockade.

The forests of northern Europe and the Alpine ranges, although in no sense primeval, represent unchanged land use during the post-glacial period. The "closed boreal forest" occupies 10,000,000 square miles, made up of spruce-ferm association (but with stands of pine, birch, and larch) above an undergrowth of mosses and herbs. The large and valuable reserve of timber is of world importance; forests once covered 80 percent of Europe's surface, and they still occupy about 30 percent.

Human adaptations. Clearly, animal life, wild and domesticated, has been adjusted to fit largely man-made patterns of vegetation, which, in turn, reflect age-long attempts to achieve chiefly economic ends. With such endeavours are associated varieties of *modus vivendi* or "modes of livelihood." In the mountains, winter hunting and the transport of felled trees by river after the spring thaw. So, too, agriculture in its many forms—in part for



The Tago, an irrigation in the interior of Spain.

subintensive use, commonly for urban markets—a basic occupation of the lowlands, long cleared of extensive forests for arable vegetation. In Mediterranean Europe, rural life, based on horticulture and arboriculture rather than on large-scale cultivation, as well as on the rearing of sheep and goats and wheat cultivation, continues, little changed in many areas. For such deeply rooted fruit-bearing trees as the olive and vine, use is made of slopes broken and terraced land. Farming also extends to specialized forms with respect to the subtropical crops of climate, sometimes supplemented by irrigation, notably

ANIMAL LIFE

Patterns of distribution. With animals as with plants, the earlier Pleistocene range and variety has been much reduced since man disposed of what nature provided. Wild fauna has been long in retreat since Upper Paleolithic times, when cave-drawings portray an animal group including even aurochs, such as mammoths, aurochs and mammoths, now extinct, and also a few such survivors as reindeer, bison, horse, and bear. Hares, swans, and geese, also limbed, and salmon, trout, and pike were taken. In many ways, inevitably, a successful competitor for "land use." By prolonged effort, settlers won the land for crops and for domesticated animals, and they hunted animals, especially for furs, as population increased in industrializing Europe, humans so less inevitably destroyed, or changed drastically, the wild vegetation cover and the animal life. With difficulty, and largely on human suffering, animals have nevertheless survived in association with contemporary vegetation zones.

The forest. In the forests some reindeer (caribou), both wild and domesticated, are still equipped to withstand the cold. Their species-specific hooves are useful in finding food in rough ground. Their adaptation is southward in winter and the birch and other plants, as well as fish, notably, that of lampreys and roach, too, are scarce for the forest but yield less than reindeer, which also provide meat, milk, pelts, wool, and hides. In the Arctic fox, bear, ermine, porcupine, and the snowy owl may appear in the tundra, where, too, the shorebirds, seabirds, river fish, and immigrant birds (swallows, ducks, and snipes) vitalize a harsh environment they would almost intolerable by the standards of most.

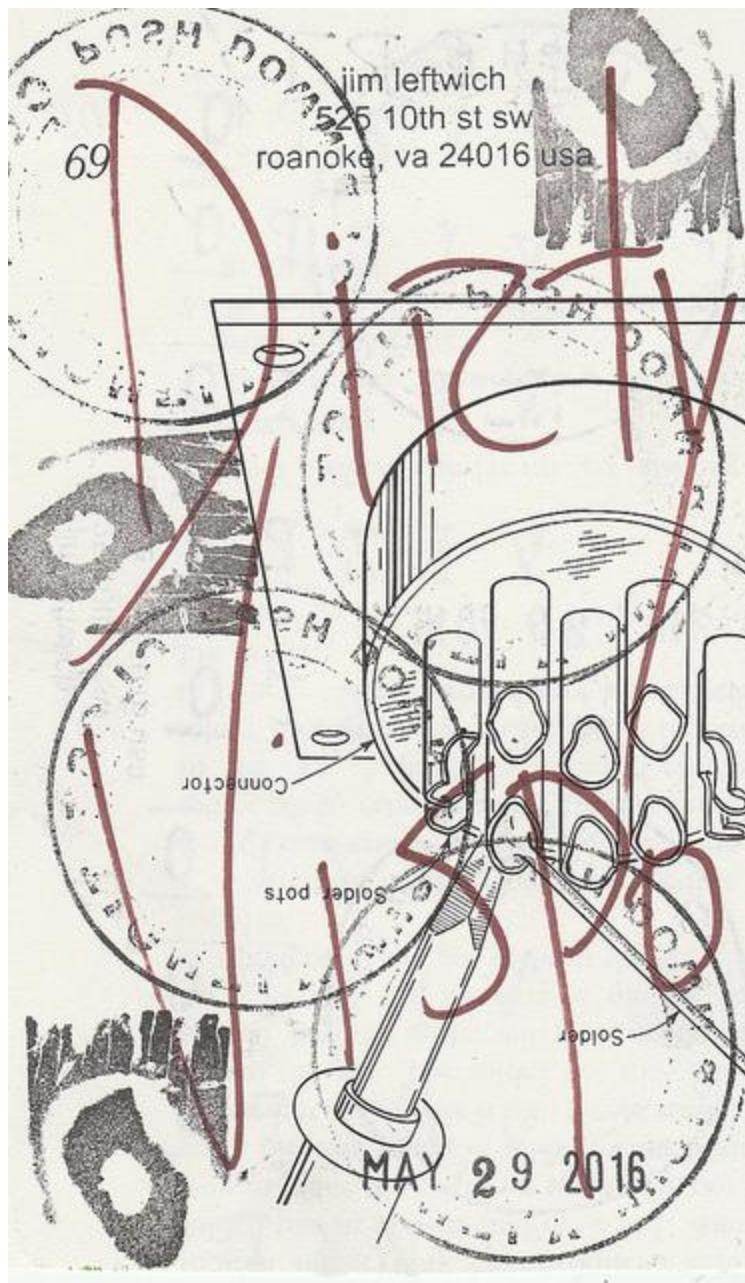
Boreal associations. In the boreal forests the animal and plant life, which has persisted since the last glacial times, is now largely reduced. Among the large surviving ungulates are the elk (moose), reindeer, and roebuck, and, among big cats, the prey, the large brown bear. The lynx has been exterminated, but not the wolf, fox, marten, badger, polecat, and white weasel. The sable, much hunted for its fur, only just survives in the northeastern forests of

The thinning out of animal species in boreal forests

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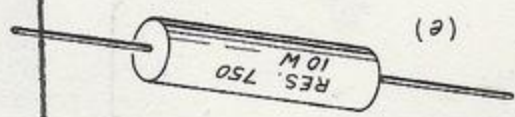
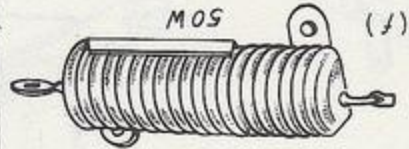
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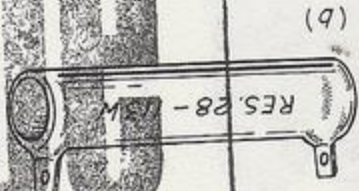
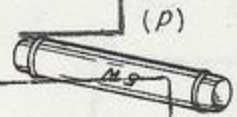
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0.2 An assortment of power resistors (not



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